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ABSTRACT

The role of university education in Malaysia in meeting the needs of the economy and employers was studied. To explore the relationship between education and employment, attention was focused on population characteristics, the labor market, the education system, and the economic system. Four major research concerns were: reasons for pursuing higher education; the relevance, adequacy, and usefulness of the training provided in the education system to the world of work; ways to correct inadequacies and inconsistencies in the system to address the needs of the world of work; and limitations of the education system in rectifying the education-employment maladjustments. Additional topics of study included: the role of career guidance, the occupational expectations of students, factors that make a job satisfying to the students and graduates, the alternatives for formal education for meeting the needs for skills, and the possibility of cooperation between employers and universities in the production of skilled manpower. Information on the choice of study methodology and the sampling design is included, and questionnaires for sixth-form students, undergraduates, graduates, and employers are appended. A five-page bibliography is included. (SW)

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IIEP Research Report No. 66

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University education and employment in Malaysia

Edited by Ungku A. Aziz
Chew Sing Buan
Lee Kiong Hock
Bikas C. Sanyal

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International Institute for Educational Planning

University education and
employment in Malaysia

This study is part of the IIEP research project on 'Higher education and employment', directed by Bikas C. Sanyal

IIEP Research Report No. 66

University education and employment in Malaysia

Edited by

Ungku A. Aziz Chew Sing Buan
Lee Kiong Hock Bikas C. Sanyal

A study undertaken jointly by the IIEP and the University of Malaya

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The IIEP research project on higher education and employment

The rapid expansion of education in the countries of the Third World has in some respects created as many problems as it has solved. At the higher levels of education, we often find a considerable discrepancy between the output of graduates in different specializations and the absorptive capacity of the labour market leading, in turn, to unemployment and under-employment of certain types of graduates. In qualitative terms, questions are being raised as to whether the content and performance of systems of higher education are able to meet the changing needs of society, including the new and changing methods of production in the labour market.

These discrepancies are in need of exploration, understanding and remedy. The high unit cost and opportunity cost in higher education, the particular social and political significance of universities and university students, and the responsibility of the higher education system in guiding and developing other levels of education make it imperative that a special effort be directed towards the analysis of both the qualitative and quantitative discrepancies that have developed in the higher education system and towards the exploration of possible means to correct them.

The present study on the relationship between university education and employment in Malaysia attempts to respond to this need. This is the result of a co-operative research between the International Institute for Educational Planning (IIEP) of Unesco and the University of Malaya, Malaysia.

For the IIEP, this forms part of a research programme on higher education and employment, undertaken during its last Medium-Term Plan (1979-83) under the direction of Dr. Bikas C. Sanyal, and designed to explore in several countries the relationship between the development of education and employment of school-leavers in both quantitative and qualitative terms. The principal objective was to improve the basis for planning the development of higher education and to reduce the mismatch between the type of training offered by the institution of higher education and the types of skills needed by the labour market.

For the University of Malaya, this study formed part of the research programme of the Institute of Advanced Studies and was concerned with the effective utilisation of graduates, the proper distribution of educational and career opportunities among the different ethnic groups and the quality and relevance of university education.

From IIEP's view, these studies, as well as other activities in the Institute's research programme under the last Medium-Term Plan, reflect the increasing concern in educational planning and policy-making with the relationship between education and employment. It is hoped that these studies not only contribute a relevant data-base for the countries studied, but also serve to consolidate the basis for preparing the IIEP Medium-Term Plans which derive their major elements from these activities.

The task of educational planning today is becoming more and more complex and calls for an effort to reach out beyond the development and application of oversimplified models of quantitative correspondence between the output of an educational system and the forecast needs of the labour market. The utilisation of training, which is an essential part of the connection between education and employment, depends on the nature of professional occupations, perceptions, attitudes and expectations of the school-leavers and the enterprises. Economic uncertainties, fast changing technology and the evolving attitudes of the society call for incorporating in the planning method a 'fine tuning' procedure for constant revision.

It is one of the strengths of this study that it attempts to provide a systematic exploration of the various dimensions of the linkage between university education and the labour market for graduates. The information base which is thus created should allow for better guidance of administrators, planners and policymakers in the further development of higher education programmes and in the monitoring of reforms in the implementation of the higher education policies in the country.

It is the policy of IIEP to insist in its research programme on close co-operation with a research team in a host country, and IIEP is particularly happy to see the present study having fully lived up to this criterion.

In conducting this study, both institutions have been fortunate in having benefited from the co-operation of all Malaysian authorities concerned, in the preparation and organization of the study, and wish to acknowledge this assistance most sincerely.

It is our hope that the government and people of Malaysia will derive some tangible benefit from the results of this study.

Financial support for this study has been provided by the Institute of Advanced Studies in Malaysia. NORAD (Norway) and ODA (United Kingdom) also provided funding as part of these agencies' voluntary contributions to the work of the IIEP.

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The success of a project of this nature depends on the co-operation of many people and institutions. We would like to express our gratitude to the Institute of Advanced Studies of the University of Malaya for providing much of the financial support for the project. A grant of US$6,000 from the International Institute for Educational Planning is also gratefully acknowledged.

We are also appreciative of the co-operation received from the Ministry of Education, the State Education Departments and educational institutions in Malaysia. A large number of people in both the public and private sectors made our task of data gathering easier by helping us to distribute and collect the questionnaires. To them we are most grateful. Thanks are also due to the sixth form students, undergraduates, graduates and employers who responded to the questionnaires.

The research team comprises Royal Professor Ungku A. Aziz (Project Director), Dr. Bikas C. Sanyal, Professor Isahak Haron, Professor Jasbir Sarjit Singh, Professor Fatimah Hamid Don, Professor T. Marimuthu, Associate Professor Chew Sing Buan, Associate Professor Lee Kiong Hock, Associate Professor Cheong Siew Yoong, Associate Professor Syed Waseem Ahmad, Mrs. Thong Lay Kim, Mr. Leonard Yong, Mrs. Mogana Dhamotharan and Mr. Moses Samuel. Thanks are due to them for their invaluable contribution to this volume.

Many of the staff at the Institute of Advanced Studies gave their help in one way or another. In particular, we would like to thank Mr. Koh Kok Eng and Miss Audrey Chen for their efficient typing of the manuscript.

Ungku A. Aziz • Chew Sing Buan • Lee Kiong Hock • Bikas C. Sanyal

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Chapter 1

Introduction

1.1 Rationale of the Project

In recent years, the problem of the relationship between education and employment has increasingly attracted the attention of educational researchers and planners. Studies on this problem has been based on four different points of view in four schools of thought.[1] First among them is the view that education provides people with skills to develop and manage the economy and related services and, therefore, investment in education is an investment in human capital.[2] The second view is that education not only provides skills for performing different vocational tasks, it also disseminates social values, promotes upward mobility in the society and acts as a screening device to select the ablest people for the best jobs.[3] The third view is that productivity is an attribute of a job and not of a person. People are matched with jobs by criteria which may be related to education, but education is not a determinant of productivity.[4] This theory has been called the labour market segmentation theory. The fourth view, which is related to the third one, is that the idea of correspondence between education and employment is an illusion existing only in the minds of school-leavers and that education has little to do with performance on the job. The usual practice of recruiting school-leavers for certain jobs according to certain educational qualifications makes new job-seekers believe that they are entitled to these types of jobs.[5]

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[1] J. Versluis, 'Education and Employment: A Synthesis', World Employment Programme Working Paper, Geneva, ILO, 1978 (mimeo.).

[2] Gary S. Becker, 'Investment in Human Capital: A Theoretical Analysis', *Journal of Political Economy*, Vol. LXX No. 5, Part II, 1962.

[3] Mark Blaug, *Education and the Employment Problem in Developing Countries*, Geneva, ILO, 1973.

[4] M. Carnoy, *Can Educational Policy Equalize Latin American Income Structure?*, Geneva, ILO-Pergamon, 1978.

The above four schools of thought can, in fact, be grouped into two categories. The first two schools of thought believe in the contribution of education to social and economic development of people. The latter schools raise doubts regarding the role of education in such development. Whatever might emerge from the different schools of thought, educational activities, in particular at the third level, have been expanding rapidly during the last two decades.

In fact, enrolment in tertiary education in developing countries has increased threefold during the period 1970-1983. This increase in enrolment has led to an increase in the output of graduates from institutions of higher education. Various factors may be identified as being responsible for the rapid expansion of higher education. First among them is the economic factor. In most developing countries, the policy behind the development of higher education was to supply the economy as rapidly as possible with the educated manpower necessary to eliminate human resource bottlenecks in expanding sectors. Many of the countries, having secured political independence during the last three decades, sought in the national interest to replace the expatriates holding high-level decision-making positions in a wide range of public and economic services. The vacuum created by their departure led to an increase in demand for high-level manpower and people with technical or sub-professional training. Therefore, emphasis was placed on the development of higher education.

At this stage, with demand exceeding supply and attention focussed on those types of higher education where graduates were in short supply, little thought was given to unemployment. The distribution of income and employment was implicitly thought to be problems that would be solved by rapid economic expansion and by the upward mobility of the poor through better educational opportunities. At that time also, industrial development was favoured over agricultural development, partly because agriculture appeared to be able to survive with unskilled labour and partly because the planners and politicians thought that only dynamic industrial growth could absorb the masses of the underemployed, especially in rural areas, and lead the economy into 'take-off'. It was also believed that this would sustain economic growth, increase consumption and improve the overall economic condition of the people. Economists were quick to argue that investment in human resources was a powerful factor for economic growth. The rates of return for such investment, although calculated very approximately, and sometimes arbitrarily, showed that in terms of productivity the rate of return on educational expenditure was as high as - if not higher than - investments elsewhere. Thus, more and more resources were invested in education with the institutions of higher education receiving a large share, a share justified by salary differentials that in turn were legitimized by educational differentials.

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[5] Ronald Dore, The Diploma Disease: Education, Qualification and Development, London, George Allen and Unwin, 1976.

Apart from the economic factor, social and political factors were also responsible for the rapid expansion of higher education. In many countries, education was considered to be a basic human right and democratization in education became a national goal. Also, as the communications system improved, the benefits of higher education were readily perceived by the people. This, coupled with the fact that institutions of higher learning charged very low fees, resulted in higher education attracting more and more students.

In all the countries, and in all the regions within a country, an institution of higher education was regarded as a symbol of national or regional prestige. Economic criteria played but a minor role in the establishment of many of the institutions of higher education, and employability of the graduates often played no role at all.

The rapid expansion of higher education has created as many problems as it has solved. Principal among these are : (a) the lack of relevance of the content and structure of the system of higher education with respect to national needs since in most of these countries the expansion did not take into consideration the changing national needs in the political, social and economic spheres; (b) the lack of confidence on the part of the key production sectors of the economy in the institutions of higher education, due to the absence of interaction between the industries and the institutions of higher education; (c) rural exodus because of the location of these institutions in urban areas; (d) increase in expectations among the students which could not be met; and (e) the mismatch in quantitative and qualitative terms between the output of the system and the absorptive capacity of the labour market.

To be fair, the authorities of higher education have been partly handicapped by the problems of the operation of the employment market and its everchanging nature. It has been difficult for them to assess the absorptive capacity of the economy due to difficulties in forecasting the manpower needs. The principal difficulties are related to the lack of information on: (a) the resource potential of the country; (b) changing technology and labour productivity; (c) educational need for different kinds of jobs; (d) occupational mobility; (e) attitudes and expectations of the potential employees and employers; and (f) recruitment and promotion practices of the employers. Even if such information were available, economic uncertainties would still prevail. However, these difficulties may be tackled by making the system of higher education more flexible in order to cope with the changing economic priorities.

It is in this context that the International Institute for Educational Planning (IIEP) launched a research project during its last medium-term plan to relate the development of higher education within a country with the changing needs of the employment market, in both quantitative and qualitative terms, so as to improve the basis for planning the development of higher education and to reduce the mismatch between the types of training offered by the institutions and the types of skills needed by the labour market. The objectives of the project were:

(a) To identify the role played by the education system in general, and the higher education system in particular, in the overall socio-economic development of the country and, conversely, the influence of social, cultural and economic factors on the development of the education system.

(b) To identify the inconsistencies, both quantitative and qualitative, that have developed in the education system and suggest measures to rectify them.

(c) To throw light on the main variables to be considered in formulating policies of intake into different disciplines and institutions.

(d) To identify the factors which intervene in the implementation of such policies and suggest ways to minimize the effect of these factors.

(e) To develop a system of indicators to be used by national policy-makers, university administrators, potential employers and students for decision-making.

(f) To create a data base for researchers in educational planning, particularly in the area of employment.

For the first five of the above objectives, an analysis of quantitative aspects, such as manpower need, trends of intake and output of the education system and structure of the labour force, is not enough. The investigation has to consider relevant qualitative aspects also, such as expectations of students, graduates and employers.

1.2 Conceptual Framework of the Project

The phenomenon of interdependence between educational development and the overall socio-economic development of a country calls for an analysis of the resource potential in natural, physical and human categories. To develop each region in a balanced way, the development strategy of a country should take account of whatever natural resource potential is available in that region. The process of exploitation and the choice of technology will be determined inter alia by natural resource potential. The exploitation of these resources needs skills which must be provided by the education system. The way in which natural resources are exploited, therefore, influences the educational development strategy in structure and content. At the same time, it is also dependent on the available and potential physical resources such as buildings, equipment, transportation and communication facilities. Development of these physical resources depends, in turn, on the development of education and vice versa. An analysis of physical resource potential, therefore, becomes an important task in ascertaining the role of education in the overall development strategy of a country.

In the analysis of the development of human resources, traditions, customs and beliefs cherished by the people cannot be ignored. Demographic changes influence the human resource potential as well. Education, for that matter higher education, has to be planned in such a way so as to develop this human resource potential in order to respond to the needs of the social and economic development of the country. An analysis of human resource development, therefore, becomes imperative in the overall analysis of the relationship between higher education and employment.

The conditions of work and the recruitment and promotion policy of the employment market influence the type of qualification that an employee would have. A full employment policy has to guarantee a job for every individual. In countries where this policy does not prevail, employment is an objective of the individual.

Therefore, the development of human resources is dependent on the operation of the labour market and the prevailing employment policy. The policy of human resource development for economic and social needs calls for an analysis of the skills needed for the various activities of the economy. The output of the education system, by type of skills taught, has to be known for proper utilization of the human resources. Before the education system can be planned with respect to intake, content and structure, it is only logical that demands for such skills in quantitative terms be estimated beforehand to whatever extent possible. These estimates of demand, which traditionally have been called manpower demand, but in our conception is broader than that because of the consideration of the qualitative aspects, are susceptible to inaccuracy due to economic uncertainties and the changing perceptions, attitudes and expectations of the different segments of society. However, some guidance is needed as to the direction the development of education in general, and higher education in particular, should take in quantitative terms in order to cater to the future needs for skills so as to avoid unemployment or underemployment.

It is believed that these estimates, if properly prepared, can provide such guidance. These quantitative estimates of needs for skills can be checked with the actual values to identify the degree of inaccuracy and to form a checklist of missing parameters and variables. They are also useful for setting the foundation of a strategy for the development of the structure and organization of the education system.

It is assumed that where higher education is concerned, estimates are easier to make because of the high degree of correspondence between the skills imparted in the higher education system and the skills needed on the job, than for lower levels of education. As regards the problems of estimating future needs for highly qualified manpower, an analysis of the quantity and quality of trained people demanded by the economy and the responsiveness of institutions of higher education becomes particularly useful.

This analysis brings out the shortcomings of the education system not only quantitatively but also qualitatively. A careful diagnosis of the education system forms the basis of any future strategy for the higher education system and also provides a yardstick for achievements in restructuring the social system through change in the education system. It also illuminates the problems encountered in achieving the targets of socialization and equality of opportunities in the world of work. These problems may be seen in the various education paths of different population groups that result in different working opportunities in the labour market.

To identify the factors obstructing socialization and equality of opportunities, a sociological analysis of the population, their perceptions, attitudes and expectations from the education system and from the labour market is needed. This analysis must give details of socio-economic characteristics such as parental income and educational background, age, sex, region of home and type of school attended.

An analysis of the problem of unemployment and underutilization of graduates in respect of the training received and the skills needed by the job can provide useful information for decision-making to improve the relationship between higher education and the world of work. This analysis would also involve a study of the process of employment as perceived by graduates and the employers.

An institutional mechanism for interaction among students, parents, institutions of higher education, graduates, employers, planners and decision-makers could also assist in improving such a relationship. A better match between the students' expectations and the admission policies of institutions of higher education could result in better academic performance and better socialization. This could be achieved through the design of rational selection criteria and an effective counselling system.

A better match between the expectations and qualifications of graduates and the expectations and requirements of employers, along with the adoption of better employment procedures and selection criteria, could result in higher productivity, more job satisfaction and less structural imbalance in highly qualified manpower. A matching system among the different segments of society could be a useful tool to develop a 'fine tuning' procedure for constant revision of the higher education system and the labour market. Such a system would be able to take into account the changing technology, re-ordering of developmental priorities, changing structure of the education system and changing perceptions, attitudes and expectations of the different segments of society.

An attempt has been made in this project to go into as much detail as possible in following the above conceptual framework. Such a research has to be interdisciplinary, involving economists, psychologists, sociologists, educationists and computer scientists. It also calls for an extensive data base, which will be discussed at a later stage.

It should, however, be noted that the problem of economic uncertainties, which are not solely due to factors within national control but which are also influenced by the international situation, cannot be resolved. Only the flexibility of the higher education system can reduce the effects of such uncertainties. With these limitations in mind, the tasks involved in achieving the objectives of the project can be summarized as follows :

(a) Analysis of the socio-economic framework of the country and the pattern of development of education in general and higher education in particular.

(b) Analysis of the demand of the economy for skills and supply from the higher education system in quantitative and qualitative terms by types of skill.

(c) Analysis of the world of higher education as perceived by students and graduates in respect of (i) the reasons for pursuit of higher education, (ii) factors influencing choice of field of study, (iii) mismatch between desired field of study and actual field of study, and (iv) career information.

(d) Analysis of the transition from higher education to work as expected by students and experienced by graduates and employers in respect of (i) mobility between higher education and work, (ii) recruitment practices, particularly for the first job, (iii) the degree of concordance between education and work with special reference to substitutability between education and occupation, need and utility of training for the content of the job, (iv) alternative methods of training arrangements to make them responsive to the needs of the job, and (v) occupational career expectations and achievement.

(e) Analysis of the world of work in respect of (i) factors influencing job satisfaction, and (ii) mobility within the working life.

(f) Establishment of a set of indicators for improved interaction between the higher education system and the labour market and for continuous adjustment in planning the development of higher education, both quantitatively and qualitatively.

In determining the types of data to be collected, the above conceptual framework plays an important role. However, since the priority of the issues relating to higher education and employment varies from country to country, the data base also varies. Also, in view of the fact that the project also emphasizes the active participation of national researchers, the methodology of analysis cannot be universal. We shall discuss below the reason for organizing the study in Malaysia, the nature of the problem of education and employment in this particular country and the conceptual framework of the study.

1.2 Rationale of the Study in Malaysia

On gaining independence from Britain in 1957, primary education in the country was already well developed. Secondary education began to expand rapidly only after independence. By 1970, about 88% of the children in the relevant age group were in primary schools, 52% were in lower secondary schools and 20% were in upper secondary schools. By 1980, the respective gross enrolment ratios had increase to 97%, 82% and 37%. These ratios have improved further since then.

In the domain of higher education, the country started from a very low base. By 1965, only 12,963 students (or 2% of the population in relevant age group) were enrolled in local public institutions of higher education. This number, however, increase rapidly to 36,004 in 1975 and 86,321 in 1985. Of the total enrolment in 1985, 23,437 were in certificate courses, 25,046 in diploma courses and 37,838 in degree courses. In addition to this, about 32,000 students were enrolled in certificate and diploma courses in local private institutions and 34,500 were enrolled in tertiary institutions overseas.

The rapid expansion of education in Malaysia in the last two decades is not without problems. Until quite recently, unemployment in the country was confined largely to those without formal education and to those with primary or secondary education.[6] In recent years, however, there has been increasing public concern as to whether the economy can absorb the output from the rapidly expanding higher education sector into productive employment. In fact, the limited information and data that are available indicate that this problem has already emerged.

For example, projected figures in the Third Malaysia Plan, 1976-1980 show that there would be a surplus of arts and humanities graduates from the universities by 1980 even though there would be a shortage of technical and science graduates.[7] The findings of Isahak Haron and Wan Abdul Kadir indicate that the number of people finding it difficult to get employment immediately after graduating from higher education institutions has been on the increase and that the waiting period for employment for these graduates has been getting longer, more so for those with degrees in the arts and humanities than for those with degrees in the professional and technical fields.[8] A recent survey of the 1983 graduates of *Universiti Malaya* (University of Malaya) indicates that about 22.5% of these graduates were still jobless some 6 months after completing their university studies.[9]

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[6] See, for example, Malaysia, Second Malaysia Plan, 1971-1975, Kuala Lumpur, Government Printer, 1971, Alan B. Wilson, 'General Education and Unemployment in West Malaysia', Jurnal Pendidikan, Vol.3, October, 1972 and N.S. Choudhry, Socio-Economic Sample Survey of Households - Malaysia, 1967/68: Employment and Unemployment, Kuala Lumpur, Department of Statistics, 1970.

[7] Malaysia, Third Malaysia Plan, 1976-1980, Kuala Lumpur, Government Printer, 1976, p.115.

While the above information may not be indicators of serious unemployment, they are pointers to a future problem. Although the growth of real gross domestic product (GDP) at an annual rate of 6.4% in the 1960s, 7.7% in the 1970s and 5.1% in the first half of the 1980s has been impressive by international standards, the present lower petroleum and commodity prices and the prolonged international recession are likely to slow down the rate of economic growth. This slower rate of economic growth is likely to affect the employment of university graduates in the future.

Concern for the effective utilization of graduates, the proper distribution of educational and career opportunities among the different ethnic groups and the quality and relevance of university education were some of the principal reasons for launching this study in Malaysia. The study would be useful as a monitoring device for the adjustment of the university education system, in quantitative and qualitative terms, to the needs of the economy and society.

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[8] Isahak Haron and Wan Abdul Kadir b. Wan Yusoff, 'Higher Education and Unemployment in Malaysia', *Jurnal Pendidikan*, Vol.8, 1982.

[9] Universiti Malaya, Hal Ewal Pelajar, Unit Kaunseling Pelajar, 'Perangkaan Pekerjaan - Pengangguran Siswazah Universiti Malaya 1983, pada 11.8.1983', Kuala Lumpur, Universiti Malaya, 1984 (mimeo.) [University of Malaya, Student Affairs, Student Counselling Unit, 'Statistics on Employment-Unemployment of the 1983 Graduates of the University of Malaya as at 11.8.83', Kuala Lumpur, University of Malaya, 1984 (mimeo.)].

1.4 Conceptual Framework of the Study in Malaysia

Underlying any research in social science there is an implicit or explicit conceptual framework. This conceptual framework is of great importance because it constitutes a part of the intellectual foundation on which the entire study rests. In such a study, some causal or non-causal ordering among variables or groups of variables can be made. For example, the population characteristics, the culture and the historical background of a country influence its economic set-up partly in a causal way and partly in a non-causal way. Association between population characteristics and economic development come through popular attitudes. This kind of association is historically and spatially conditional. The economic set-up of Malaysia today owes itself to the history and culture of the region and the nation as well as the political decisions that have been taken in the past. The educational set-up owes itself to the social, economic and cultural background. To understand the relationship between education and employment, the researcher has to go deep into the population characteristics, regional resource potential, economic development strategy of the country, the role that education has played in this development and the attitudes the people cherish in respect of education. The researcher has also to understand what education and employment mean in the local context. It is interesting to observe that education in the past has been considered largely as an instrument for cultural and social development. Gainful employment was not the principal objective. Today, the situation has apparently changed and most graduates appear to aspire for employment which will match their educational level and type. The belief that education has other objectives to serve should not, however, be thought to have lost its meaning in this context.

The functioning of the education system in the past contributes to the 'match' or 'mismatch' it has with the economic system at present. Most important of all, the expectations and attitudes of the students, graduates and employers contribute in a complex way to the relationship between education and employment. The expectations and attitudes also change over time, and at a particular point of time, they are dependent on the characteristics held by the people in the past. It should be noted that in our conceptual framework we are not only guided by a set of easily identified issues to be explored. We are also influenced by a vast unknown field in the phenomenon of the relationship between education and employment. A great deal of measurement and estimation have to be done to explore that unknown area.

In addition to an analysis of the relationship between education and employment through an analysis of the population characteristics, the labour market, the education system and the economic system, four issues were investigated with major emphasis in this study.

The first relates to the reasons for the pursuit of higher education. This issue was investigated to find out the employment implications of education as perceived by the students. Do students pursue higher education for its own sake ? Or, do most of them pursue higher education for better employment opportunities ?

The second major issue that was investigated was the relevance, adequacy and usefulness of the training imparted in the education system to the world of work.

The third issue is the consequence of the second: What can be done to correct the inadequacies and inconsistencies in the system insofar as the needs of the world of work are concerned ?

The fourth issue that was examined was the limitations of the education system in rectifying the education-employment maladjustments. The problem of unemployment cannot be tackled by adjusting the education system alone. The education system is only a part of a broader system covering the relationships between education and employment and embracing the economy, the political set-up of the region, the traditions, customs and beliefs of the people. Hence, any diagnosis of the education system must necessarily be carried out within a broader socio-economic framework.

Apart from the above issues, many other problems were also explored in the study. These relate to the role of career guidance, the occupational expectations of students, the factors which make a job satisfying to the students and graduates, the alternatives to formal education for meeting the needs for skills, and the possibility of co-operation between employers and universities in the production of skilled manpower.

To explore the above issues, different methodological approaches can be adopted. The alternative possibilities and the rationale for choosing the approach adopted in this study are discussed in Chapter 2.

Chapter 2

Methodology of the Study

2.1 Introduction

As indicated in Chapter 1, different methodological approaches can be adopted to examine the relationship between university education and employment in Malaysia. Three alternative methods were, in fact, explored in this study. This chapter discusses the three methods and the rationale for choosing the method adopted. The chapter also discusses the information needs of the study, the method of analysis, the questionnaires and the sampling design and procedure of the surveys.

2.2 Methodological Aspects

One of the possible methods that was explored was a longitudinal study of students, graduates and employers. This method assumes that a representative sample each of the different sections of society involved in the system of higher education would be selected. Their personal, social, economic and educational characteristics are noted over time so as to grasp the phenomenon of interrelationship between the system of higher education and employment over time. Needless to mention, the problem areas mentioned in the preceding chapter would have to be considered in the analysis. The method essentially considers cohorts of students, graduates and employers. Over time, the samples should refer to the same population of students, graduates and employers to allow for control of different characteristics generating from different cohorts, and to identify the effects of characteristics of individuals in the analysis of the interrelationship between higher education and employment. The difficulties encountered in this approach are as follows:

(a) Such an operation becomes extremely costly, particularly in identifying the same individuals over a long period of time. As time passes, the nature of the sample changes substantially, violating the original assumption of retaining the characteristics of the same population.

(b) The decision-makers and planners have to wait for a long period of time to obtain the results of the analysis.

(c) With the time needed, the group of researchers, decision-makers and planners change their place of work so that retaining the same conceptual framework of the research and even the list of problem areas becomes difficult.

(d) Although the main argument in favour of a longitudinal study has been to retain the characteristics of the population groups studied over time, the changes in the socio-economic and political characteristics in a country influence greatly the characteristics of the population groups and so, in fact, the study is considering different population groups over time.

However what is more interesting in a longitudinal study is that it reveals the changes that occur among the same groups of people over time due to changes in the economy, politics and social characteristics of a country. Although perhaps useful to researchers for theoretical purposes, the results may not be very useful to decision-makers or planners at a particular point in time.

Another method that was explored was to analyse census data over time. The advantage of using census data is that sampling error is avoided. Generally, such data are collected by different national agencies for their own purposes. For example, the population characteristics could be obtained from the population census, the characteristics of the labour force from the census of employment, and educational statistics would be available from the educational census. So, what the researcher has to do is to design his study so that answers to the listed problem areas could be available from an analysis of the census data. This would reduce the cost of collection of data greatly. The disadvantage in this approach are as follows :

(a) Even if developing countries have census data on population, employment and education systems, the questions asked in such censuses cannot provide all the information needed for an analysis of the relationship between education and employment. Modifying the research design in order to align it with the census statistics may result in important problem areas not being analysed at all.

(b) Accuracy of census statistics has been very often put to question. Although the degrees of inaccuracy may not very severely affect the conclusions needed for policies in the area for which the census was conducted, analysis of such detailed issues as discussed in the conceptual framework could be seriously handicapped.

(c) Census data very rarely consider the attitudes and expectations of the different social groups which, according to our framework, play an important role in matching the world of education with the world of work. The importance of such information is not as yet fully recognized by the planners of education and employment.

The third approach that was explored was to make use of cross-sectional data. This approach identifies the most important population groups at a particular point in time, takes representative samples of the groups and analyse the relationship (keeping in view the list of problem areas to be tackled at that point in time) so as to provide tools for the decision-makers for aligning the world of education with the world of work and vice versa. Such an exercise can be repeated over time to indicate the role time plays in the mechanism of interaction between the different factors of the world of education with those of the world of work. From the exercises, one can review the characteristics of each unit of observation of the samples in retrospect and forecast the characteristics of each unit for a future point of time. This latter aspect and the aspect of repetition of the exercise over time are considered as tracing the phenomenon of relationship between education and employment over time. In the analysis, consideration is given to whatever secondary information that is available on any of the characteristics - be they census data, survey data or any descriptive analysis of the situation.

The disadvantages of this approach are:

(a) The individuality of the units of observation is lost.

(b) The scope for analysing generalizable aspects of the relationship between education and work is limited. Too much emphasis is given to the list of problem areas which are of concern to the researchers and decision-makers of the country. Theoretical aspects of the relationship are not tackled very deeply.

(c) Too many issues are sometimes treated with superficial techniques, particularly in respect of attitudes and expectations.

(d) Possibilities of repeating the same exercise in the same way after a period of time are limited.

(e) Such an exercise is more costly than an analysis of census data.

However, this approach appears attractive because it can (a) provide quick answers to some questions, (b) provide a diagnostic analysis of the current situation for the decision-makers and planners, (c) develop a data base with indicators to be used by the planners and decision-makers at a future point of time, and (d) develop team-spirit in research work among people from different disciplines within a country with marginal assistance from the IIEP. The above advantages, plus the practical nature of the study, the simplicity of the analysis, the possibility of considering a large number of issues at the same time and the possibility of following up the situation over time convinced the research team to accept this approach.

2.3 Information Required and Method of Analysis

A study of this nature requires a wide range of information. There is, first of all, a need for information regarding the pattern of economic development, the socio-economic development strategy adopted by the government, the structure of the labour force and labour productivity. This type of information is needed to assess the kinds of training activities which will have to be provided by the education system.

There is also a need for information regarding the education system itself. The present state of the higher education system depends largely on the past development of education in general and higher education in particular. Hence, information on the development of education is important for identifying the reasons for educational imbalances, if any, in the present system. Data on the participation rates in education by age, sex, socio-economic status and ethnic group are also needed to identify imbalances among social groups and to formulate strategies for redressing the imbalances. Data on the cost of education are important for checking the efficiency of the education system and for finding ways to reduce the cost.

In this study, a wide range of data and information regarding the education system and the socio-economic framework was collected and analysed to generate indicators for the planning of education in the country. In the analysis, simple statistical tools such as cross-tabulation, frequency distribution and trend analysis were used.

Apart from the above, a study such as this also requires information regarding the influence of a number of 'other' factors on the output of graduates and their employability. The 'other' factors which influence the output of the university system include the admission policy of universities, the reasons for pursuing university education, the role of career guidance, the mobility of students within the university system and the expectations of students regarding the world of work. The magnitude of the influence of each factor on the supply of graduates by field of specialization can be analysed and the implications for the planning of university education drawn. As such, information regarding factors such as those mentioned above was also collected. The information was gathered by means of surveys carried out among sixth form students and undergraduates.

In the absence of reliable data on unemployment, information regarding the waiting period of graduates before their first employment can be a good indicator of their employability. The employability of graduates also depends on the usefulness of the training received to perform a job. Such information can provide useful guidance for orientating the educational programmes of universities. A survey was carried out among graduates to gather the types of information deemed important in this study.

Since employers are the users of the product of the education system, their perceptions and expectations regarding university education and employment are especially important. For example, information pertaining to their perceptions regarding selection criteria for different types of jobs, arrangements for placement of graduates, alternative methods of training and the relevance, adequacy and usefulness of the training received by their graduate employees is invaluable for adjusting the education system to the needs of the world of work as well as for exploring the possibility of co-operation between universities and employers in the production of skilled manpower. In view of the importance of such information, yet another survey was carried out among a sample of employers to gather the necessary information.

As in the analysis of the socio-economic framework and the education system, simple statistical techniques such as cross-tabulation and frequency distribution were used to describe the survey data. In addition, test of significance between proportions was also used to analyse the data collected in the employer survey.

The types of information required for the study as well as their sources are summarized in Table 2.1. It can be observed that the list of information needed is divided into six sets. The first two sets relate to the socio-economic framework of the country and the education system. The remaining four sets relate to the perceptions, expectations and experiences of sixth form students, undergraduates, graduates and employers regarding university education and employment.

Much of the data relating to the socio-economic framework and the education system were obtained from documents such as national development plans, economic reports, statistical reports, annual reports of institutions and ministries, census reports and studies carried out by institutions and individuals. The remaining four sets of data were obtained through questionnaire surveys.

Table 2.1

List of Variables and Types of Information Required

Variables	Information required	Sources
(a) Socio-economic framework of the country.		
Economic and social development trend.	History of economic and social development of the country and the New Economic Policy.	Development plans, economic surveys : government and non-government agencies, historical studies in the country : government and non-government agencies and individual authors.
Economic sectors, their growth potential and bottlenecks in development.	The economic structure of the modern sector : the gross domestic product, level of saving, employment and the role of the subsistence sector.	Economic surveys, reports from national government agencies, international agencies, private agencies national economic and social development plans

Table 2.1 (contd.)

List of Variables and Types of Information Required

Variables	Information required	Sources
Population characteristics by region, social group and sex.	Regional distribution of population by social group and sex and formal employment as percentage of total population.	Population census, sample surveys, economic surveys, government reports, and historical studies on the country
Characteristics of the labour force : employment situation.	Labour force by sex, sector and ethnic group, participation rates by sex and educational qualification, estimates of manpower shortages and surpluses.	Development plans, economic reports, census, sample surveys, census of manufacturing industries, manpower surveys, employment exchange offices, survey of graduates and other official reports.
Types of manpower needed for the development of the economy.	Stock of qualified manpower by ethnic group, educational level, occupation and sector, national policy guidelines in respect of ethnic balance, economic growth and other attitudinal changes of the people and social aspects of the country.	Manpower reports, census statistics, develpoment plans and survey of employers
(b) Education system.		
Past development of education in general and higher education in particular, its rationale and inconsistencies, if any, in the pattern of development as related to the social-economic framework of the country.	Statistics on enrolment by type and level of education-for the past and present-with special reference to higher education, enrolment by sex, region and social group, growth of enrolment particularly for higher education and growth of facilities and expenditure.	Ministry of Education, individual educational institutions, educational research units, development plans and the Department of Statistics
Existing organizational structure and its problems, if any, in respect of meeting the objectives.	Facilities for education available at present in the formal system particularly for the higher level of education, linkage between the higher education system and the second-level education system and role of private and public sector agencies.	Same as above.
Quantitative development of higher education	Stock of enrolment by type of higher education, institution, sex and region of	Same as above.

Table 2.1 (contd.)

List of Variables and Types of Information Required

Variables	Information required	Sources
as related to the socio-economic framework of the country and the national policy guidelines.	home, the existing admission policy for different types of higher education, stock of graduates by specialization, age and sex, past trend of growth in enrolment, cost of higher education, the capacity of the institution to expand or control, number of students abroad for training and estimates of graduates.	
(c) Perceptions and expectations of sixth form students.		
Socio-economic background.	Age, sex, ethnic origin, home state and guardian's educational level occupation, income and industrial sector.	Questions 1-12
Educational status.	Grade of secondary school certificate, present course of study, satisfaction with present course, sources of finance and reasons for undertaking sixth form education.	Questions 13 -16, 19 and 22.
Expectations regarding higher education and employment.	Estimated earnings if in employment after sixth form, intention after sixth form education, dependence of choice of career on success in university studies, preference for the methods of obtaining information about conditions of work, conditions for accepting a job in the rural area, importance of factors in getting a job, importance of factors in making a job satisfactory, reasons for intending to pursue university education, intended course of study at university, importance of factors in the choice of a course of study, expected sources of finance, expected occupation and employment sector after graduation, expected earnings after graduation, intention to seek employment related to field of study and country in which respondent intended to pursue university education.	Questions 21 and 23-30.
Educational and career guidance and counselling.	Sources of educational and career guidance and their usefulness.	Questions 17, 18 and 30(x).

Table 2.1 (contd.)

List of Variables and Types of Information Required

Variables	Information required	Sources
(d) Perceptions and expectations of undergraduates.		
Socio-economic background.	Age, sex, ethnic origin, marital status, place of origin and guardian's income, occupation and educational level.	Questions 53-61.
Educational status.	Type of secondary school attended, language medium, examination results, employment, (if any), before entering university, faculty and area of specialization, reasons for choosing area of specialization , if any, sources of finance, reasons for pursuing higher education, examination results, usefulness of university education, competence in using English and Malay reference materials, adequacy of secondary education and part-time job during the vacation.	Questions 1-5, 7-12 and 14-25.
Expectations regarding employment.	Perceptions regarding the possibility of getting a job which is commensurate with qualification expected employment sector, expected earnings, expected occupation and reasons for choice of the occupation, expected place of occupation, reasons for not being interested in working in rural areas, expected waiting period for first job after graduation, opinions about seriousness of graduate unemployment and importance of factors in getting a job.	Questions 28-39 and 43-45.
Role of career guidance.	Desirability of involvement of the university in providing an employment bureau, sources of career information and sources which influence students' choice of occupation.	Questions 40-42.
Miscellaneous information.	Place of residence as an undergraduate, preference of place of residence, frequency in reading newspaper and novels, interest in political and economic development of Malaysia and other countries, interest in cultural activities and interest in games and sports.	Questions 6, 7, 14-17, 26 and 27.

Table 2.1 (contd.)

List of Variables and Types of Information Required

Variables	Information required	Sources
(e) Experiences of graduates.		
Socio-economic background.	Age, sex, ethnic origin, state in which secondary education was completed, marital status, occupation, sector, educational level and income level of guardian and spouse at present, occupation and income level of guardian when respondent was an undergraduate.	Questions 1-6, 29 and 31.
Educational background and expectations.	Intended field of study, actual field of study, change of field of study, if any, reasons for the change and sources of finance for university education.	
Employment status.	Current occupation, industrial category, sector of employment, method of obtaining first employment, waiting period before first employment, status of first and present job (temporary, permanent, part-time), change in job, if any, and reasons for the change, importance of different methods of obtaining information regarding conditions of work, usefulness of the course of study in present job, usefulness of a degree in present job, conditions for accepting a job in rural areas, importance of different factors in getting a job, importance of factors in making a job satisfactory and in career advancement and present income.	Questions 5, 13-19 and 22-29.
(f) Perspectives of employers.		
Background.	Location, status (government, quasi-government, private), percentage of local and foreign ownership, date of establishment, main types of production or service, size.	Questions 4-10.
Employment characteristics.	Number of employees by professional and academic level, ethnic origin, nationality, sex, occupational level, field of specialization, methods of recruitment, selection criteria, forecast of	Questions 11-20.

Table 2.1 (contd.)

List of Variables and Types of Information Required

Variables	Information required	Sources
	graduate manpower needs, starting salary of new graduates, and influence of public sector graduate salary on organization's graduate salary.	
Relation between the university and the labour market.	Perception of employers regarding the role of the university, perception of employers regarding the importance of co-curricular activities, willingness to co-operate with the university in fulfilling manpower needs and methods of co-operation, importance of relevant academic or professional qualification to job performance, performance of graduate employees, importance of in-service training, types of in-service training, importance of post-graduate training and reward system for employees with post-graduate qualifications.	Questions 21-30 32-34.

2.4 Formulation and Field Trials of the Questionnaires

Four types of questionnaires were devised to gather the information needed for the study: one for the sixth form students, one for the undergraduates, one for the graduates and one for the employers. The questionnaires were adapted from those applied in a number of similar studies in other countries.[1]

Most of the questions were of the close-ended type. Some were meant for single response only, while others, such as those relating to the reasons for undertaking university education and factors that may discourage respondents from working in rural areas, were accompanied by a list of possible reasons and factors, respectively. The respondents were required to indicate the degree of importance of each of the reasons or factors. The rationale for including items of this nature is that there could be more than one reason for pursuing university education and more than one factor that discourages people from working in rural areas. Furthermore, the reasons and factors may vary in their degree of importance. Such questions would enable different dimensions of the information to be collected.

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[1] See, for example, Bikas C. Sanyal, Waldo S. Perfecto and Adriano A. Arcelo, *Higher Education and the Labour Market in the Philippines*, Paris, Unesco-IIEP, 1981 and Bikas C. Sanyal and El Sammani A. Yacoub, *Higher Education and Employment in the Sudan*, Paris, Unesco-IIEP, 1975.

After the questionnaires had been designed, a workshop was organized at Universiti Malaya to discuss the objectives of the study and the research methodology, including the research instruments. As a result of the workshop, some of the items in the questionnaires were deleted and several other items modified. The revised questionnaires were field tested on the relevant population groups.

The main objective of the field trials was to assess the clarity of definitions, the appropriateness of language, questionnaire style and coding format as well as to seek overall impressions regarding the face validity of the questions. The field trials resulted in further changes in the questionnaires and the resultant forms were used in the survey.

2.5 Sampling Design and Survey Procedure

One of the major problems encountered in the study was the variability of the populations to be surveyed. As a result, different sampling designs and survey procedures had to be adopted for the different population groups.

2.5.1 The Sixth Form Survey

The sixth form survey was carried out in early 1981. At the time of the survey, there were more than 800 government and government-aided secondary schools in the country. However only 167 of them provided sixth form education.[2] Sixth form education comprises two years, one year at the lower sixth form and another year at the upper sixth form. The survey covered only students at the upper sixth form level.[3]

In the process of trying to obtain a representative sample of students, a stratified sampling procedure was adopted for the study. In the first stage of the sampling procedure, a list of schools with sixth form classes was obtained from the Educational Planning and Research Division of the Ministry of Education. The schools were stratified according to (a) state, (b) those which provided only sixth form arts classes, (c) those which provided only sixth form science classes, and (d) those which provided both sixth form arts and science classes.[4] Based on this stratification, 56 schools were selected. Except for the state of Perlis, where one of the two schools was selected, about 35% of the schools in each state were included in the sample.

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[2] Malaysia, Kementerian Pelajaran, Bahagian Perancangan dan Penyelidikan Pelajaran, 'Senarai Sekolah-sekolah yang ada Tingkatan Enam di Malaysia (seperti pada 30hb Jun, 1981)', Kuala Lumpur, Bahagian Perancangan dan Penyelidikan Pelajaran n.d. (mimeo.) [Malaysia, Ministry of Education, Educational Planning and Research Division, 'List of Schools with Sixth Form in Malaysia (as at 30th June, 1981)', Kuala Lumpur, Educational Planning and Research Division, n.d. (mimeo.)].

[3] At the time of the survey, March-April 1981, only the upper sixth form student were enrolled in schools. Intake for the lower sixth form was processed well after the survey was over. The upper sixth form students were assumed to be an appropriate target population since they were either at the threshold of higher education or the world of work and would perhaps be in a better position to respond to questions related to these areas. The survey covered only students in government and government-aided schools. Students outside the formal school system such as those in Tunku Abdul Rahman College and in private institutions were excluded.

[4] For convenience, the few technical schools in the country were subsumed under the category of schools which provided only science classes.

In the second stage of the sampling procedure, a simple questionnaire was sent to the principals of the 56 schools to obtain information regarding the number of sixth form classes and the number of students in each class. This was found to be necessary as up-to-date information was not available. Only 51 of the 56 schools in the sample responded to the questionnaire. Of the 51 which responded, 14 of them provided only arts classes, 8 provided only science classes and 29 provided both arts and science classes.

In the final stage of the sampling procedure, 80 classes (37 science classes and 43 arts classes) were selected from the 51 schools. The students in the 80 classes constituted the student sample. The total number of students in the sample was 2,131, of which 829 were science students and 1,302 were arts students.

Except for the state of Selangor and the Federal Territory of Kuala Lumpur, where the researchers personally administered the questionnaire to the target students, the questionnaires were mailed to the students in the selected classes through the principals of the sample schools. The principals were requested to collect and return the completed questionnaires to the researchers.

A total of 1,865 students (37% science students and 63% arts students) responded to the questionnaire. Hence, the proportion of students in the sample who responded was 87.5%. The respondents represented 15.6% of the total number of upper sixth form students in government and government-aided schools in the country.[5]

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[5] In 1981 there were 11,927 upper sixth form students (4,434 in the science stream and 7,493 in the arts stream) in government and government-aided schools. Source: Malaysia, Kementerian Pelajaran, Bahagian Perancangan dan Penyelidikan Pelajaran, 'Senarai Sekolah-sekolah yang ada Tingkatan Enam di Malaysia (seperti pada 30hb Jun, 1981)' op.cit.

2.5.2 The Undergraduate Survey

The undergraduate survey was carried out between November 1982 and October 1983. The sample for this survey was drawn from final year students of Universiti Malaya, Universiti Kebangsaan Malaysia (National University of Malaysia), Universiti Pertanian Malaysia (University of Agriculture, Malaysia), Universiti Sains Malaysia (University of Science, Malaysia) and Universiti Teknologi Malaysia (University of Technology, Malaysia).[6]

The decision to use final year undergraduates was because among all undergraduates, they comprised the group closest to completing their degree courses and would, therefore, be most concerned with employment. In view of this, it was assumed that the perceptions and expectations of the final year undergraduates regarding employment were more pertinent than those of the undergraduates who were in the earlier stages of their university education.

No attempt was made to draw a representative sample of the target population in the five universities. The procedure was to use as many of the students as possible in the target population. The questionnaire was administered whenever time could be arranged for the purpose. Hence, the representation of students from the various fields of study and from the five universities was largely determined by the availability of students to respond to the questionnaire.

At Universiti Malaya, the researchers were responsible for administering the questionnaire. At the other universities, arrangements for the students to respond to the questionnaire were made with the relevant departments, faculties or schools , and the administration of the questionnaire was under the charge of either the Office of Student Affairs or the Office of the Registrar.

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[6] The other two universities in the country, namely, Universiti Islam Antarabangsa (International Islamic University), established in 1982, and Universiti Utara Malaysia (Northern University of Malaysia), established in 1984, were not included in the survey.

Out of a total of 4,739 final year undergraduates, 2,432 were administered the questionnaire. Only 3 students did not respond to it. The total number of respondents represented 51.3% of the total number of final year undergraduates. However, the response rate by university varies, ranging from 17.1% for Universiti Kebangsaan Malaysia to 83.8% for Universiti Pertanian Malaysia (See Table 2.2).

Table 2.2

Distribution of Final Year Undergraduate Population and Response Rate

University	Final year undergraduate population	Response	Percentage response
Universiti Malaya	1,911	1,366	71.5
Universiti Kebangsaan Malaysia	1,293	221	17.1
Universiti Pertanian Malaysia	389	326	83.8
Universiti Sains Malaysia	864	327	37.8
Universiti Teknologi Malaysia	282	189	67.0
Total	4,739	2,429	51.3

2.5.3 The Graduate Survey

One of the problems of the graduate survey was to identify the population and to determine its characteristics. It was initially proposed that the sample be drawn from lists of graduates to be obtained from the universities in the country. Preliminary investigation carried out at Universiti Malaya revealed that current addresses of graduates were not available. As such, it was decided that the graduate population be ascertained through their employers in both the public and private sectors.

As regards the public sector, information pertaining to the number of graduates in the ministries, departments and statutory bodies was obtained from the Public Services Department in early 1982. Based on the information, the population was randomly cluster sampled, i.e., all the graduate employees in the ministries, departments and statutory bodies which were selected were included in the sample. The sample comprised 3,182 graduates, or 9.2% of the graduate population. The questionnaire was administered to the graduates in the sample and a response rate of 26.7% was obtained (See Table 2.3).

Table 2.3

Distribution of Public Sector Graduate Population, Sample Size and Response Rate

Public sector	Population	Sample	Response	Percentage response
Ministries	18,211	1,311	331	25.2
Departments	7,928	1,044	214	20.5
Statutory bodies	8.329	827	305	36.9
Total	34,468	3,182	850	26.7

The survey of graduates in the private sector was also carried out in early 1982. In the first stage, reply-paid postcards were sent to the 3,198 limited companies found in a list provided by the Department of Statistics. The postcard was designed to obtain information regarding the number of graduates employed in each of the establishments and the willingness of the establishments to participate in a more detailed survey in the second stage of the study. Out of the 3,198 establishments, 1,169 (36.6%) responded to the exercise.

Only 674 of the 1,169 establishments which responded had graduates among their employees. Of the 674 establishments, 617 indicated willingness to participate in the study.

Over two-thirds of the 617 establishments were located in Selangor (including the Federal Territory of Kuala Lumpur) and Pulau Pinang. Not surprisingly, the larger companies in terms of graduate employment size were also found in these states. In view of this, it was decided that for administrative convenience the sample be drawn only from those companies in these states which had graduate employees and which indicated a willingness to participate in the study. Establishments with less than 5 graduates were excluded from the sample.

The total number of establishments selected was 71 (53 in Selangor and the Federal Territory of Kuala Lumpur and 18 in Pulau Pinang). The number of graduates in these establishments was 1,833. Table 2.4 shows the distribution of the sample by graduate employment size and by economic sector.

The questionnaires were sent to all the graduates in the sample. A total of 820 graduates responded to the questionnaire, giving a response rate of 44.7%.

2.5.4 The Employer Survey

Relevant information regarding the employers was derived from two separate surveys - the private sector employer survey and the public sector employers survey. The surveys yielded a sample of 302 establishments (226 private sector establishments and 76 public sector establishments).

The private sector employer survey was carried out in two stages. The first stage of the exercise was co-ordinated with that of the private sector graduate survey. After this stage, the two surveys adopted slightly different procedures. As regards the private sector employer survey, pre-tested questionnaires were sent in August 1982 to all the establishments, with or without graduate employees, which had indicated a willingness to participate in the second stage of the survey. This was followed by reminders in October and December of the same year. The

Table 2.4

Distribution of Private Sector Graduate Sample by Graduate Employment Size and by Economic Sector

Pulau Pinang

Number of graduates	Economic sector 1	2	3	4	5	6	7	8	9	Total
6 - 10			4 (37)			1 (7)				5 (44)
11 - 25		1 (14)	7 (121)							8 (135)
26 - 50			2 (65)					1 (40)		3 (105)
51 - 100			2 (140)							2 (140)
Total		1 (14)	15 (363)			1 (7)		1 (40)		18 (424)

Selangor (including the Federal Territory of Kuala Lumpur)

Number of graduates	1	2	3	4	5	6	7	8	9	Total
6 - 10		1 (7)	10 (8)			6 (56)	1 (8)	4 (27)		22 (187)
11 - 25	1 (15)		6 (104)		1 (15)	5 (89)		3 (60)		16 (283)
26 - 50	1 (30)		2 (100)	1 (30)		4 (140)		2 (72)	1 (35)	11 (407)
51 - 100							1 (87)	1 (80)		2 (167)
101 - 150								2 (365)		2 (365)
Total	2 (45)	1 (7)	18 (291)	1 (30)	1 (15)	15 (285)	2 (95)	12 (604)	1 (35)	53 (1,409)

Note: Figures without brackets represent the number of companies. Figures in brackets represent the number of graduate employees in the companies.

Key:
1 = Agricultural sector
2 = Mining sector
3 = Manufacturing sector
4 = Utilities sector
5 = Construction sector
6 = Commerce sector
7 = Transport sector
8 = Finance sector
9 = Services sector

reminders included telephone calls and personal visits to the establishments. The survey was brought to an end in February 1983.

The total number of private sector establishments which responded was 226. The responses comprised only 7.1% of the number of establishments in the list provided by the Department of Statistics. Part of the low response rate may be attributed to non-response from establishments which did not employ university graduates at the time of the survey. In fact, if the analysis is confined only to establishments with graduate employees, the response rate would be much higher than the 7.1% indicated above.

The public sector survey was based on a list of public and statutory bodies provided by the Implementation Co-ordination Unit of the Prime Minister's Department. The list contained a total of 149 public and statutory bodies at the district, state and federal levels of government. The first stage of the survey began in March 1982 and was followed by two rounds of reminders sent out in May and July of the same year. The second stage of the survey began in September 1982. At the close of the survey in February 1983, a total of 76 statutory authorities and public enterprises (51.0% of the target population) had responded to the survey.

Although the responses may be considered high for a mail-questionnaire survey, it was not possible to check on the representativeness of the responses since information pertaining to the employment of graduates in the establishments which did not respond was not available.

As indicated earlier, most of the items in the four questionnaires were pre-coded. However, some open-ended items were also included to collect the necessary additional information which could not be gathered through the structured items. The responses were coded in the coding column provided on the questionnaire. They were then transferred to coding sheets. Data cards were punched from the coding sheets.

Coding and punching were verified before analysis was carried out at the Computer Centre at Universiti Malaya.

Chapter 3

Socio-Economic Framework of the Country

3.1 Introduction

Malaysia comprises Peninsular Malaysia[1] and the states of Sabah and Sarawak. The peninsular states account for 40% of the total land area of 329,745 square kilometres; Sabah and Sarawak account for the other 60%. The population in 1985 was 15.8 million, of which 82% lived in Peninsular Malaysia and 18% lived in Sabah and Sarawak. About 60.1% of the population were Bumiputera,[2] 30.9% Chinese and 8.4% Indians (including Sri Lankans and Pakistanis).

Peninsular Malaysia gained her independence from Britain in 1957. Sabah, Sarawak and Singapore joined Peninsular Malaysia in 1963 to form the new nation, Malaysia. Singapore, however, left Malaysia in 1965 to form an independent republic.

With independence, Peninsular Malaysia inherited three legacies which influenced its national development objectives. On the economic front, the country emerged from the era of colonialism with a classic export economy geared towards the production and export of a few primary commodities.[3] The high degree of concentration on natural rubber and tin, together with the vagaries of the international primary commodity markets, gave rise to a high degree of export earnings instability. This problem was a source of irritation and anxiety to the government.

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[1] The term Peninsular Malaysia refers to the former West Malaysia and the preceding Federation of Malaya. It refers, therefore, to the eleven states of Selangor, Johor, Melaka, Negeri Sembilan, Pahang, Perak, Pulau Pinang, Kedah, Perlis, Kelantan and Trengganu and the Federal Territory of Kuala Lumpur.

[2] The term Bumiputera literally means 'sons of the soil' and refers to the Malays and other indigenous people of the country. In 1985, Malays comprised roughly 85% of the Bumiputera population.

[3] At the onset of independence, natural rubber and tin together accounted for 85% of Peninsular Malaysia's gross export earnings and 45% of her GDP.

Another legacy relates to the rapid rate of increase in the population. During the colonial period, the British actively encouraged mass immigration at the turn of the century until the 1930s. Lower rates of immigration and natural increase brought the population growth rate down during the mid-1930s and the 1940s. After World War II, however, while mortality rate dropped, fertility rate rose dramatically. By the mid-1950s, the population rate of natural increase was about 3.5% per annum - one of the highest recorded in the world.[4] The impact of this on the growth of the labour force was another source of concern to the government.

The third and most obvious colonial legacy is the plural society of modern Malaysia. British immigration policy transformed the more-or-less homogeneous Malay society into a heterogeneous society. By 1957, Malays accounted for 49.8% of the population, Chinese 37.2% and Indians 11.3%. The immigration policy, together with the policy of separate development, gave rise to differences in the patterns of urbanization and access to education. This, coupled with differences in family background, resulted in a high degree of inter-ethnic occupational imbalances.[5]

These three legacies gave rise to various pressures calling for change in the pattern of economic and social development. Some of the clearest statements of the desired changes are contained in the nation's development objectives spelled out in the five-year development plans.

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[4] K. Young, W.C.F. Bussink and P. Hasan, Malaysia: Growth and Equity in a Multi-Racial Society, Baltimore, Johns Hopkins University Press, 1980, pp.97-99.

[5] C. Hirschman, Ethnic and Social Stratification in Peninsular Malaysia, Washington D.C., American Sociological Association, 1975.

3.2 National Objectives

Planning proper began with the Second Malaya Plan, 1961-1965[6] (SMP). The principal objective then was to transform the country into a progressive and dynamic economy. This would be achieved through an improvement in the rural standard of living, the provision of greater employment opportunities for the rapidly growing labour force, a faster rate of economic growth, agricultural and industrial diversification (to reduce the heavy reliance on natural rubber and tin) and an increase in social overheads.[7]

With the formation of Malaysia in 1963, the principal objective became one of national integration. The First Malaysia Plan, 1966-1970[8] (1MP) carried with it a twenty-year outline perspective plan designed to create an environment in which the principal ethnic groups could live together in harmony. With two exceptions, this would be achieved through the same means as before. The first exception was a slight re-ordering of means. Rapid rate of economic growth replaced improvement in rural living standards at the top of the priority list. The second was that a family planning programme to decrease the rate of population growth was added to the list of priorities.

In the wake of the 1969 federal elections and the ensuing racial riots of May that year, the basic presuppositions about the road to national integration changed. The Second Malaysia Plan, 1971-1975[9] (2MP) saw the introduction of the New Economic Policy (NEP). The overriding objective remained one of national unity.

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[6] Malaya, Second Malaya Plan, 1961-1965, Kuala Lumpur, Government Printer, 1961.

[7] Listed in the order in which they were given. Ibid. p. 16.

[8] Malaysia, First Malaysia Plan, 1966-1970, Kuala Lumpur, Government Printer, 1966.

[9] Malaysia, Second Malaysia Plan, 1971-1975, Kuala Lumpur, Government Printer, 1971.

However, this would be achieved through the eradication of poverty, irrespective of race, and societal restructuring so as to eliminate the identification of race with economic function rather than through economic growth alone.

The Third Malaysia Plan, 1976-1980[10] (3MP) and the Fourth Malaysia Plan, 1981-1985[11] (4MP) adopted the same strategy but with increasing emphasis on societal restructuring.[12] The rationale is that 'ethnic differences are always much sharper than economic differences ...' hence '... an important part of this task (of economic development) is to remove the glaring socio-economic differences among the major ethnic groups.'[13]

In the face of resource constraints, particularly in the public sector, restructuring now plays second fiddle to the problem of sustaining economic growth.[14] The Fifth Malaysia Plan, 1986-1990 (5MP) states that 'the pursuit of excessive restructuring objectives ... in the face of anticipated slower economic growth may lead to adverse effects on overall long-term performance of the economy.[15]

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[10] Malaysia, Third Malaysia Plan, 1976-1980, Kuala Lumpur, Government Printer, 1976.

[11] Malaysia, Fourth Malaysia Plan, 1981-1985, Kuala Lumpur, National Printing Department, 1981.

[12] This is clearly seen in the allocation of public sector development expenditure which are directly traceable to poverty eradication and societal restructuring. The share of the latter has increased from 17.3% under the 2MP to 27.2% under the 3MP and then to 37.2% under the 4MP. (See Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 6.3, p.127 and Malaysia, Fifth Malaysia Plan, 1986-1990, Kuala Lumpur, National Printing Department, 1986, Tables 7-3 and 7-10, pp.231 and 244.

[13] Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit. p.17.

[14] Ibid.

[15] In line with this, the allocation of public development expenditure for restructuring has decreased (by 24%) for the first time since the inception of the NEP. Under the 5MP, restructuring will also have a smaller share of total public development expenditure directly traceable to poverty eradication and restructuring. See Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., p.21 and Table 7-10, p.244.

3.3 National Achievements

It appears that the relatively concrete goal of economic growth and development of the earlier development plans has given way to the abstract goal of national unity in the later plans. National unity, however, is to be attained through the eradication of poverty and the elimination of the identification of race with economic function within the context of economic growth rather than redistribution.

By most standards, Malaysia has achieved commendable rates of economic growth (see Table 3.1). During the SMP and the 1MP periods, the economy recorded an average annual growth rate in real GDP of 6.4%. During the 2MP and 3MP periods, although growth in real GDP fluctuated widely, it averaged 7.9% per annum. This improvement may be attributed to the sharply higher rates of investment growth (particularly public sector investment growth in the latter half of the 1970s), the emergence of sizeable crude oil production and an improvement in the terms of trade. During the 4MP period, real GDP growth fluctuated less widely, but the average rate fell to 5.8%.[16] One significant feature of this period was the very high rate of increase in external public debt (26.6% per annum).

Table 3.2 gives a detailed breakdown of GDP by industrial origin for selected years over the 1970-1985 period. Although the data are not strictly comparable due to a change in the base year price index, there is discernible decline in the share of the agricultural, forestry, livestock and fishing sector in total output. In 1970, its share was 30.8% but by 1985 it was 20.3%. The share of the mining and quarrying sector has increased from 6.3% in 1970 to 10.1% in 1985, reflecting primarily the rise in the share of petroleum and LNG. Overall, the secondary sector has increased its share by about 6.9 percentage points, with

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[16] In August 1986, Bank Negara, Malaysia's central bank, revealed that real GDP in 1985 had in fact declined by 1%. This reduces the average annual growth rate in real GDP to 5.1%.

Table 3.1

Expenditure on Gross Domestic Product, 1961-1985
(Percentage)[a]

	Share of GDP in current prices						Average annual rate of growth in constant prices[b]				
	1961	1965	1970	1975	1980	1985[c]	1961-1965	1966-1970	1971-1975[d]	1976-1980	1981-1985[c]
Consumption	78.0	77.3	75.5	76.2	66.8	65.7	5.6	4.1	6.6	9.6	4.7
Gross investment	16.6	18.2	19.9	23.4	30.7	33.1	9.5	7.7	9.7	13.8	8.9
Public	n.a.	n.a.	n.a.	9.4	11.6	15.2	n.a.	n.a.	9.3	12.4	13.1
'Private	n.a.	n.a.	n.a.	15.6	19.4	17.8	n.a.	n.a.	9.9	12.6	5.3
Exports	48.8	44.3	43.8	45.5	57.3	52.2	3.8	7.4	6.0	9.3	7.9
Imports	43.3	39.9	39.2	45.1	54.8	51.2	3.0	4.5	5.3	14.3	7.2
GDP at market prices (M$ million)[e]	6,972	9,175	12,253	22,332	53,538	82,829	6.7	6.0	7.2	8.6	5.8
GDP at factor cost											
Target							4.4	4.8	6.8	8.5	7.6[f]
Actual							6.4	5.5	7.4	8.6[d]	5.8[f]

Sources: Young, Bussink and Hasan, Malaysia: Growth and Equity in a Multi-Racial Society, op.cit. pp.320-21 and various Malaysian development plan documents.

Notes: a - Figures in the table are percentages except for figures for GDP at market prices which are values in M$ million.
b - In 1970 prices except for 1980-1985 figures which are in 1978 prices.
c - Preliminary data.
d - Growth rates in investment after adjusting for purchases of aircraft by MAS and ships by MISC.
e - M$ denotes the Malaysian ringgit, a local currency unit. M$1.00 is approximately equal to US$0.39.
f - At market prices.

manufacturing sector's share increasing from 13.4% to 19.1%. On the other hand, the share of the tertiary sector in GDP has risen only marginally from 41.9% in 1970 to 44.1% in 1985.

Table 3.2

Gross Domestic Product by Industrial Origin
(Percentage Share of Total)

Sector	1970[a]	1975[a]	1980[b]	1985[c]
Agriculture, forestry and fishing	30.8	27.7	22.8	20.3
Mining and quarrying	6.3	4.6	10.0	10.1
Manufacturing	13.4	16.4	20.0	19.1
Construction	3.9	3.8	4.6	5.1
Electricity, gas and water	1.9	2.1	1.4	1.7
Transport, storage and communications	4.7	6.2	5.7	6.4
Wholesale and retail trade, hotels and restaurants	13.3	12.8	12.0	12.7
Finance, insurance, real estate and business services	8.4	8.5	8.2	8.8
Government services	11.1	12.7	10.2	12.3
Other services	2.5	2.8	2.3	2.2
Total (M$ million)	12,308	17,365	44,702	59,344

Sources: Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 2.1, p.11 and Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., Table 2.1, p.40.

Notes: a - In 1970 prices.
b - In 1978 prices.
c - Preliminary, in 1978 prices.

Table 3.3 shows that a high proportion of the labour force is still engaged in the primary sector, but the proportion has declined from 53.1% in 1970 to 36.8% in 1985. The share of the secondary sector in total employment has increased from 15.4% in 1970 to 22.0% in 1985. For the tertiary sector, its share has increased from 31.5% to 41.1% over the same period, reflecting primarily the rapid growth of the public sector.

Table 3.3

Employment by Sector, 1970 - 1985
(Percentage Share of Total)

Sector	1970	1975	1980	1985
Agriculture, forestry and fishing	50.5	45.3	39.7	35.7
Mining and quarrying	2.6	2.1	1.7	1.1
Manufacturing	11.4	13.5	15.7	15.1
Construction	4.0	4.4	5.6	6.9
Electricity, gas and water	0.8	0.8	0.6	0.7
Transport, storage and communications	3.4	3.9	4.3	4.8
Wholesale and retail trade, hotels and restaurants	10.9	11.8	14.0	15.5
Finance, insurance, real estate and business services	0.9	0.9	1.6	1.9
Government services	11.7	13.1	13.7	15.0
Other services	3.8	4.2	3.1	3.2
Total ('000)	3,395.9	4,247.0	4,816.9	5,468.5

Sources: Malaysia, *Fourth Malaysia Plan, 1981-1985*, *op.cit.*, Table 4-6, p.81 and Malaysia, *Fifth Malaysia Plan, 1986-1990*, *op.cit.*, Table 3-5, pp.102-3.

The changes in industrial origin of the GDP and in the distribution of employment by sector have taken place rather rapidly. Taken as a whole, they suggest that important structural changes have occurred since 1970.

Although the economy has grown rapidly, and has become less dependent on the agricultural sector, it remains very open. In the 1960s and early 1970s, the share of exports in real GDP declined steadily from 49% in 1961 to 39% in 1972. Since 1974, when the prices of crude and partly refined petroleum tripled the 1973 values, the share of exports in GDP has increased. In 1985, exports accounted for over 52% of GDP.

In the early 1960s, over one-half of Malaysia's export earnings were derived from natural rubber and a further 14% from tin (see

Table 3.4). Today, less than 12% originate from these two commodities. Over the same period, the share of petroleum, LNG and palm oil have increased significantly to the extent that primary commodities still account for two-thirds of gross exports. However, the export of manufactured goods has also increased from 3% in 1960 to 32% in 1985. A large part of the increase has been in electronics, garments and textiles, and footwear.[17]

The overall picture is one of considerable success. The push to diversify the economy has also been successful and the nation has been able to reduce its dependence on natural rubber and tin. Without this diversification, economic growth in Malaysia would have been hampered.

However, government intervention in the economy, particularly in pursuit of the NEP goals, has given rise to a very large public sector presence in the economy. At its level of development, Malaysia probably has the largest government share in the economy of any country.[18] Rapid growth of the public sector carries with it several serious implications. Firstly, it generally implies a rapid growth in external public debt and an increase in debt service ratios.[19] Furthermore, it has also been shown that rapid

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[17] As a percentage of gross export of manufactured goods, these three items of export increased from 7% in 1970 to 63% in 1985.

[18] Official data often understate the role of the public sector by excluding the expenditure of the non-financial public enterprises (NFPE). During the 4MP period, the NFPEs' development expenditure amounted to M$27.7 billion, compared with M$46.4 billion for the Federal Government. See Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., p.224.

[19] In Malaysia, external public debt grew at an average annual rate of 29%, increasing from US$390 million in 1970 to US$10,665 million in 1983. As a percentage of GNP, external public debt rose from 10% to 38.6% - above the weighted average for the upper-middle income countries. Debt service as a percentage of gross export earnings rose from 3.6% to 5.6%, or from US$21 million to US$669 million over the same period. See International Bank for Reconstruction and Development, World Development Report, 1985, New York, Oxford University Press, 1985, Table 16, p.205.

Table 3.4

Value of Exports by Commodity, 1960-1985

Commodity	1960	1965	1970	1975	1980	1985
Rubber Value (M$ million) (%)	2001.0 (55.1)	1461.8 (38.6)	1723.7 (33.4)	2025.6 (21.9)	4618.0 (17.5)	2864.0 (7.5)
Tin Value (M$ million) (%)	507.7 (14.0)	871.8 (23.0)	1005.6 (19.5)	1206.1 (13.1)	2505.3 (8.9)	1595.0 (4.2)
Palm Oil Value (M$ million) (%)	60.6 (1.7)	107.2 (2.8)	264.3 (5.1)	1319.5 (14.3)	2515.3 (8.9)	3944.0 (10.4)
Sawlogs Value (M$ million) (%)	118.6 (3.3)	263.3 (7.0)	643.6 (12.5)	370.7 (7.3)	2616.2 (9.3)	2667.0 (7.0)
Sawn Timber Value (M$ million) (%)	75.1 (2.1)	128.7 (3.4)	205.8 (4.0)	440.6 (4.8)	1178.3 (4.2)	1020.0 (2.7)
Crude Petroleum Value (M$ million) (%)	146.7 (4.0)	86.7 (2.3)	202.6 (3.9)	3794.5 (41.1)	6709.1 (23.8)	8970.0 (23.5)
LNG Value (M$ million) (%)	-	-	-	-	-	2319.0 (6.1)
Manufactured goods Value (M$ million) (%)	109.7^a (3.0)	189.3^a (5.0)	333.4^a (6.5)	1927.0 (20.9)	6269.8 (22.3)	12229.0 (32.1)
Total Value (M$ million) (%)	3632.6 (100.0)	3782.5 (100.0)	5763.1 (100.0)	9230.9 (100.0)	28171.6 (100.0)	38094.0 (100.0)

Sources: Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 2-3, pp.18-9 and Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., Table 2-12, p.70.

Note : a - Estimate.

growth of public investment is a precursor to later debt-servicing difficulties.[20] Secondly, rapid growth of the public sector carries with it allocative and efficiency implications. Large government deficit financing inevitably crowds out the private sector which, in turn, impinges on the levels of economic activity and the formation of productive capital. Efficiency in the public sector becomes a crucial factor.[21]

Turning to the NEP, it may be recalled that the two important goals are poverty eradication and societal restructuring. The former has, in fact, been an important objective since independence, but it has received a further push under the NEP.

In spite of the provision of infrastructure and land in the rural areas and the attempt to raise productivity of small scale farmers, little or no progress was made to reduce the incidence of poverty in the 1950s and 1960s.[22] In 1970, the incidence of poverty was estimated to be 49% among all households in Peninsular Malaysia (see Table 3.5). Available data indicate that the incidence of poverty has declined since then. In 1984, the incidence of poverty was estimated to be only 18% for the whole of Peninsular Malaysia.

Comparing 1983 with 1984, it appears that the incidence of poverty has declined by a phenomenal 12 percentage points.[23] Redefinition of the concept of poverty to take into account

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[20] Ibid., pp.43-70.

[21] The efficiency of the government's firms has been called into question recently. Over one-third of the 900 firms have been losing propositions from the very start. See reports in the Star, 25 June 1986, p.3 and 27 June 1986, p.1.

[22] Young, Bussink and Hasan, Malaysia : Growth and Equity in a Multi-Racial Society, op.cit. pp.42-43.

[23] Based on the 3MP targets, the data for 1983 will show a shortfall of 25.6% in actual achievement in the reduction of the number of poor households. However, data for 1984 show an over-achievement of 146.6%. See Malaysia, Third Malaysia Plan, 1976-1980, op.cit., Table 4-3, p.73.

Table 3.5

Puninsular Malaysia: Incidence of Poverty by Rural-Urban Strata, 1970 - 1984

Stratum	1970			1976			1984		
	Total households ('000)	Total poor households ('000)	Incidence of poverty (%)	Total households ('000)	Total poor households ('000)	Incidence of poverty (%)	Total households ('000)	Total poor households ('000)	Incidence of poverty (%)
Rural	1,203.4	705.9	58.7	1,400.8	669.6	47.8	1,629.4	402.0	24.7
Rubber smallholders	350.0	226.4	64.7	126.7	73.8	58.2	155.2	67.3	43.4
Padi farmers	140.0	123.4	88.1	187.9	150.9	80.3	116.6	67.3	57.7
Estate workers	148.4	59.4	40.0	-	-	-	81.3	16.0	19.7
Fishermen	38.4	28.1	73.2	28.0	17.6	62.7	34.3	9.5	27.7
Coconut smallholders	32.0	16.9	52.8	19.3	12.4	64.0	14.2	6.6	46.9
Other agriculture	144.1	128.2	89.0	528.4	275.4	52.1	464.2	158.8	34.2
Other industries	350.5	123.5	35.2	510.5	139.5	27.3	763.6	76.5	10.0
Urban	402.6	85.9	21.3	530.6	94.9	17.9	991.7	81.3	8.2
Agriculture	-	-	-	24.8	10.0	40.2	37.5	8.9	23.8
Mining	5.4	1.8	33.3	4.5	0.5	10.1	7.8	0.3	3.4
Manufacturing	84.0	19.7	23.5	55.3	9.5	17.1	132.3	11.3	8.5
Construction	19.5	5.9	30.2	34.7	6.1	17.7	86.6	5.3	6.1
Transport and utilities	42.4	13.1	30.9	53.2	9.1	17.1	73.9	2.7	3.6
Trade and services	251.3	45.4	18.1	242.0	33.7	13.9	472.7	21.9	4.6
Activities not adequately defined	-	-	-	116.1	26.0	22.4	180.9	30.9	17.1
Total	1,606.0	791.8	49.3	1,931.4	764.4	39.6	2,621.1	483.3	18.4

Source:'Malaysia, *Fifth Malaysia Plan, 1986-1990*, *op.cit.*, Table 3.1, p.86.

factors such as scholarships and the value of owner-occupied houses could have accounted for much of the decrease.[24] The failure on the part of the plan documents to disclose the differences which such changes make to the incidence of poverty makes it difficult to draw any definite conclusion.[25]

Available evidence shows that between 1957 and 1970, substantial increase in income inequality actually occurred.[26] This trend probably continued into the 1970s (see Table 3.6). Data from the 4MP show increases in the ratio of the mean to median income for all sub-groups during the 1970s, implying increasing income inequality. However, data from the 5MP present a different picture. They show that income inequality has decreased since *circa* 1979. The difference between the 4MP and 5MP data arises from the use of different definitions.[27] DaVanzo and Kusnic, for instance, have shown clearly that a broadening of the definition of income leads to an unambiguous reduction in income inequality.[28] In this circumstance, one must remain somewhat sceptical of the reported achievements between 1970 and 1984.

The second objective of the NEP is societal restructuring or the elimination of the identification of race with economic function. This is to be achieved by redressing ethnic imbalances in employment and corporate ownership and, therefore, in incomes.

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[24] Malaysia, *Fifth Malaysian Plan, 1986-1990*, *op.cit.*, p.85.

[25] Details concerning the poverty line must be obtained elsewhere but these are often piecemeal. See, for instance, Young, Bussink and Hasan, *Malaysia: Growth and Equity in a Multi-Racial Society*, *op.cit.*, p.43.

[26] D. R. Snodgrass, *Inequality and Economic Development in Malaysia*, Kuala Lumpur, Oxford University Press, 1980, pp.67-68.

[27] Malaysia, *Fifth Malaysian Plan, 1986-1990*, *op.cit.*

[28] J. DaVanzo and M. Kusnic, 'Ethnic Differences in Income in Peninsular Malaysia: Their Sensitivity to the Definition and Measurement of Income', *Singapore Economic Review*, 28(2), 1983.

Table 3.6

Peninsular Malaysia: Mean and Median Real Monthly Household Income, 1970 - 1984, and Annual Growth Rate, 1970-1979, by Social Group (in 1970 prices)

Social group	Mean-median ratio	1970	1973	1976	1979[a]	1979[b]	1984	Annual growth rate 1970-79 (%)
Bumiputera	Mean (M$)	172	209	237	309	296	384	5.9
	Median (M$)	120	141	160	200	197	262	5.7
	Ratio	1.43	1.48	1.48	1.55	1.50	1.46	
Chinese	Mean (M$)	394	461	540	659	565	678	4.0
	Median (M$)	268	298	329	383	373	462	4.0
	Ratio	1.47	1.54	1.64	1.72	1.51	1.47	
Indian	Mean (M$)	304	352	369	467	455	494	3.5
	Median (M$)	194	239	247	314	314	347	4.2
	Ratio	1.57	1.47	1.49	1.49	1.45	1.42	
Urban (all ethnic groups)	Mean (M$)	428	492	569	675	587	695	3.5
	Median(M$)	265	297	340	368	361	463	4.1
	Ratio	1.62	1.66	1.67	1.83	1.63	1.50	
Rural (all ethnic groups)	Mean (M$)	200	233	269	355	331	372	4.5
	Median (M$)	139	159	180	230	222	269	4.8
	Ratio	1.44	1.47	1.49	1.54	1.49	1.38	
All	Mean (M$)	264	313	353	459	417	494	4.6
	Median (M$)	166	196	215	270	263	326	4.9
	Ratio	1.59	1.60	1.64	1.70	1.59	1.52	

Sources: Malaysia, Fourth Malaysia Plan, 1981-1985, *op.cit.*, Table 3-9, p.56 and Malaysia, *Fifth Malaysia Plan, 1986-1990*, *op.cit.*, Table 3-4, p.99.

Notes: a - 4MP data.
b - 5MP data.

Major structural changes in employment have occurred since 1970. In particular, there has been a definite shift in employment away from the primary (agricultural) sector towards the secondary (mining, manufacturing, construction and transport) and the tertiary (wholesale and retail trade, banking, public administration, education, health, defence and utilities) sectors in Peninsular Malaysia (see Table 3.7).[29] Among the ethnic groups, the Bumiputera experienced the greatest structural change. For instance, of the Bumiputera in employment in 1970, 61.6% were in the primary sector; by 1980 only 46.1% were in this sector. Conversely, the proportions of the Bumiputera workforce in the secondary and tertiary sectors increased over the period. Structural changes for the other ethnic groups were less marked.

Despite these structural changes, ethnic imbalances persisted, particularly in the primary sector where there was hardly any change in ethnic shares. Bumiputera share of primary sector employment declined marginally from 67.6% in 1970 to 66.3% in 1980. The Chinese share remained at 19.9% while the Indian share rose marginally from 11.5% to 13.0% over the same period.

One important feature of the structural change is that by 1980 Bumiputera formed the largest ethnic group in the tertiary sector. This can be attributed directly to the NEP's employment quotas and the rapid expansion of public sector employment (at 5.2% per annum compared with 3.1% in total employment).[30]

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[29] Note that the classification scheme used in the Malaysian development plans differs from the usual. The primary sector excludes the mining and quarrying sector. Mining and quarrying, manufacturing, construction and utilities sectors are lumped together as the secondary sector. The tertiary sector covers only the wholesale and retail, finance, government and other services sectors.

[30] In 1980, Bumiputera accounted for 60% of total public sector employment. See Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., Table 3-5, pp.102-3.

Table 3.7

Peninsular Malaysia : Employment Structure by Ethnic Group and Sector, 1970-1990

	1970							
Ethnic Group	Primary Sector %	No. ('000)	Secondary Sector %	No. ('000)	Tertiary Sector %	No. ('000)	Total %	No. ('000)
Bumiputera (%)	67.6	902.3 (61.6)	32.1	215.6 (14.6)	42.6	359.7 (24.3)	51.8	1477.6 (100.0)
Chinese (%)	19.9	265.4 (25.4)	58.7	394.3 (37.8)	45.5	383.9 (36.8)	36.6	1043.6 (100.0)
Indian (%)	11.5	154.0 (51.1)	8.5	57.1 (18.9)	10.7	90.3 (30.0)	10.6	301.4 (100.0)
Other (%)	1.0	12.9 (46.6)	6.7	4.7 (17.0)	1.2	10.1 (36.5)	1.0	27.2 (100.0)
Total (%)	100.0	1,344.6 (46.8)	100.0	671.7 (23.6)	100.0	844.0 (29.6)	100.0	2,850.3 (100.0)

	1980							
Ethnic Group	Primary Sector %	No. ('000)	Secondary Sector %	No. ('000)	Tertiary Sector %	No. ('000)	Total %	No. ('000)
Bumiputera (%)	66.3	1020.2 (46.1)	39.8	495.4 (22.4)	47.0	695.9 (31.5)	51.9	2211.5 (100.0)
Chinese (%)	19.9	306.1 (19.6)	51.1	636.0 (40.8)	41.6	615.9 (39.5)	36.5	1558.0 (100.0)
Indian (%)	13.0	199.4 (43.3)	8.5	105.8 (23.0)	10.5	155.5 (33.8)	10.8	460.7 (100.0)
Other (%)	0.9	13.4 (39.2)	0.6	7.5 (21.9)	0.9	13.3 (38.9)	0.8	34.2 (100.0)
Total (%)	100.0	1,539.1 (36.1)	100.0	1,244.7 (29.3)	100.0	1,480.6 (34.7)	100.0	4,264.4 (100.0)

	1990							
Ethnic Group	Primary Sector %	No. ('000)	Secondary Sector %	No. ('000)	Tertiary Sector %	No. ('000)	Total %	No. ('000)
Bumiputera (%)	61.4	1091.4 (37.4)	51.9	982.7 (26.8)	48.4	1046.8 (35.8)	53.6	2120.9 (100.0)
Chinese (%)	28.3	503.2 (26.2)	38.1	575.3 (29.9)	39.0	844.5 (43.9)	35.3	1923.0 (100.0)
Indian (%)	9.6	170.6 (30.2)	9.5	142.1 (25.3)	11.7	252.1 (44.6)	10.4	565.8 (100.0)
Other (%)	0.7	12.4 (31.5)	0.5	7.0 (17.8)	0.9	20.0 (50.8)	0.7	39.4 (100.0)
Total (%)	100.0	1,777.6 (32.6)	100.0	1,508.1 (27.7)	100.0	2,163.4 (39.7)	100.0	5,449.1 (100.0)

Sources: Malaysia, Third Malaysia Plan, 1976-1980, op.cit., Table 4-14, p.79 and Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 3-10, p.57.

A comparison of the existing situation with the original 1990 targets shows that a lot remains to be done, particularly in the primary and secondary sectors. In the light of the current economic recession, it is doubtful that the original 1990 targets can be met. Not surprisingly, the 1990 targets have been revised downwards under the 5MP.[31]

The NEP's restructuring objective also seeks to ensure that employment in the occupational categories reflects the ethnic composition of the population. This implies substantial restructuring (see Table 3.8). The 1990 targets call for gains by Bumiputera in all occupational categories except in the agricultural workers category. The increase is to be particularly large for the administrative and managerial (24 percentage points) and the production, transport and other workers (16 percentage points) categories. Conversely, the targets call for relative reduction in Chinese employment in these two categories (-23 percentage points and -17 percentage points, respectively).

Significant occupational shifts occured during the 1970-1980 period. The overall distribution of new jobs created during the period followed quite closely the ethnic composition of the population (see Table 3.9). Of the 734,000 new jobs filled by Bumiputera, over one-half were in the production, transport and other workers category. A further 16% were clerical and related jobs. Among the Chinese, almost one-third of the new jobs were in the production, transport and other workers category, 27% in sales and related workers category and a further 13% in agricultural workers category. Over one-half of the new jobs filled by the Indians were in the production, transport and other workers category and almost one-third were in the agricultural workers category.

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[31] The 3MP targets refer to Peninsular Malaysia only while the 5MP targets refer to Malaysia as a whole. Nevertheless, a comparison between the two shows quite clearly that a downward revision of the targets has been made.

Table 3.8

Peninsular Malaysia: Employment Structure by Ethnic Group and Occupation, 1970-1990

			1970		
Occupation	Bumiputera (%)	Chinese (%)	Indian (%)	Others (%)	Total ('000)
Professional and technical	4.3 (47.0)	5.2 (39.5)	4.9 (10.8)	13.4 (2.7)	136.7
Administrative and managerial	0.5 (24.1)	1.8 (62.9)	0.8 (7.8)	5.8 (5.2)	30.7
Clerical and related workers	3.4 (35.4)	6.3 (45.9)	8.0 (17.2)	7.9 (1.5)	142.5
Sales and related workers	4.7 (26.7)	15.3 (61.7)	9.5 (11.1)	4.0 (0.4)	258.5
Service workers	6.7 (44.3)	8.6 (39.6)	10.9 (14.6)	12.3 (1.5)	225.8
Agricultural workers	62.4 (72.0)	21.2 (17.3)	41.0 (9.7)	47.7 (1.0)	1278.7
Production, transport and other workers	18.0 (34.2)	41.6 (55.9)	24.6 (9.6)	9.0 (0.3)	777.4
Total	1,477.6 (51.8)	1,043.6 (36.6)	301.4 (10.6)	27.7 (1.0)	2,850.3

			1980		
Occupation	Bumiputera (%)	Chinese (%)	Indian (%)	Others (%)	Total ('000)
Professional and technical	5.3 (50.0)	5.6 (36.9)	5.9 (11.4)	11.7 (1.7)	236.2
Administrative and managerial	0.7 (31.6)	1.9 (57.0)	0.7 (6.1)	7.9 (5.3)	51.2
Clerical and related workers	7.7 (55.3)	7.1 (36.2)	4.5 (6.9)	15.5 (1.7)	306.5
Sales and related workers	4.5 (23.1)	19.2 (69.2)	7.1 (7.6)	2.3 (0.2)	432.3
Service workers	7.6 (47.9)	9.0 (39.9)	8.8 (11.6)	6.1 (0.5)	351.3
Agricultural workers	45.2 (67.7)	18.6 (19.7)	38.1 (11.9)	31.0 (0.9)	1474.8
Production, transport and other workers	29.0 (45.4)	38.6 (42.6)	34.9 (11.4)	25.4 (0.5)	1412.1
Total	2,211.5 (51.9)	1,558.0 (36.5)	460.7 (10.8)	34.2 (0.8)	4,264.4

			1990[a]		
Occupation	Bumiputera (%)	Chinese (%)	Indian (%)	Others (%)	Total ('000)
Professional and technical	6.3 (48.5)	6.8 (37.7)	7.6 (12.2)	14.1 (1.6)	392.2
Administrative and managerial	1.2 (47.9)	1.4 (39.9)	1.2 (10.3)	3.2 (1.9)	73.7
Clerical and related workers	6.7 (46.5)	7.9 (39.3)	9.1 (13.2)	10.7 (1.1)	435.9
Sales and related workers	7.5 (35.7)	15.2 (52.5)	11.5 (11.5)	5.7 (0.4)	629.5
Service workers	9.6 (50.8)	9.4 (36.1)	10.9 (12.1)	13.4 (1.0)	566.7
Agricultural workers	32.0 (61.0)	20.6 (20.4)	24.4 (9.7)	30.5 (0.8)	1,580.5
Production, transport and other workers	36.7 (50.6)	38.8 (38.8)	35.3 (10.2)	22.5 (0.5)	2,178.8
Total	3,007.6 (51.3)	2,176.9 (37.2)	628.8 (10.7)	44.0 (0.8)	5,857.3

Source : Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Tables 3-11 and 9-6, pp. 59 and 175.

Notes : Except for figures in the row total, figures without brackets are column percentages whereas figures in brackets are row percentages. Figures without brackets in the row total refer to the number of workers in thousands.

a - Revised target.

Table 3.9

Peninsular Malaysia : Distribution of New Jobs by Ethnic Group and Occupation, 1970-1990

	1970-1980									
Occupation	Bumiputera		Chinese		Indian		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Professional and technical	54.0	7.3	33.1	6.4	12.1	7.6	0.2	4.6	99.5	7.0
Administrative and managerial	8.8	1.2	9.9	1.9	0.7	0.4	1.1	16.9	20.5	1.4
Clerical and related workers	119.0	16.2	45.4	8.8	-3.5	-2.2	3.1	47.7	164.0	11.6
Sales and related workers	30.7	4.1	139.4	27.1	4.0	2.5	-0.3	-4.6	173.8	12.3
Service workers	68.4	9.3	50.6	9.8	7.8	4.9	-1.3	-20.0	125.5	8.9
Agricultural workers	78.4	10.7	68.6	13.3	51.7	32.5	-2.6	-40.0	196.1	13.9
Production, transport and other workers	374.6	51.0	167.4	32.5	86.5	54.3	6.2	95.4	634.7	44.7
Total	733.9	100.0	514.4	100.0	159.3	100.0	6.5	100.0	1,414.1	100.0
Percentage	51.9		36.4		11.3		0.4		100.0	

	1980-1990									
Occupation	Bumiputera		Chinese		Indian		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Professional and technical	72.1	9.1	60.9	9.8	20.8	12.4	2.2	22.4	156.0	9.8
Administrative and managerial	19.1	2.4	0.2	neg.	4.5	2.7	-1.3	-13.3	22.5	1.4
Clerical and related workers	33.2	4.2	60.4	9.8	36.4	21.7	-0.6	-6.1	129.4	8.1
Sales and related workers	124.7	15.7	31.2	5.0	39.6	23.6	1.7	17.3	197.2	12.4
Service workers	119.7	15.0	64.2	10.4	27.7	16.5	3.8	38.8	215.4	13.5
Agricultural workers	-35.0	-4.4	159.6	25.8	-21.7	-12.9	2.8	28.6	105.7	6.6
Production, transport and other workers	462.3	58.1	242.4	39.2	60.8	36.2	1.2	12.2	766.7	48.1
Total	796.1	100.0	618.9	100.0	168.1	100.0	9.8	100.0	1,592.9	100.0
Percentage	50.0		38.9		10.6		0.6		100.0	

Source: Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Tables 3-11 and 9-6, pp.59 and 175.

The distribution of new jobs during the period altered the structure of employment by occupation and ethnic group. By 1980, Bumiputera had increased their share in all occupational categories except in sales and agricultural work where their share declined. Chinese share in all categories, except in sales and related workers category, declined. The Indians maintained their share in most occupations. However, in clerical and related occupations, their share registered a substantial decline.[32]

Judging from the original 1990 targets, a substantial amount of restructuring remains to be done, particularly in the case of agricultural jobs. The original target implies that the number of Bumiputera in agricultural jobs must decline in absolute terms by over 35,000. On the other hand, the number of Chinese in agricultural jobs must increase by over 160,000. Many observers have questioned the realism of these targets.[33] Under the 5MP, the number of agricultural jobs to be filled by the Chinese has been reduced to 33,000.[34]

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[32] O. Mehmet argues that the changing patterns suggest an upward mobility of the Chinese into better quality jobs in sales and related occupations, leaving the lower quality jobs to be filled by the relatively unskilled Bumiputera and Indians. This conclusion may be true to some extent but analysis based on occupational classification at the one-digit level tends to bias upwards the extent of upward mobility. See O. Mehmet, 'Malaysian Employment Restructuring Policies: Effectiveness and Prospects Under the Fourth Malaysia Plan, 1980-1985', Asian Survey, 22(10), 1982.

[33] The official view is that the Chinese do not seem to be very interested in agricultural jobs. See Mohd. Nor, 'Employment and Labour Force Restructuring to Achieve the NEP Goals', in K.S. Jomo (ed.) Malaysia's New Economic Policies, Kuala Lumpur, Malaysian Economic Association, 1985, p.42. However, one important problem is that most, if not all, desirable new jobs in agriculture are found in land development schemes meant primarily for the Bumiputera as part of the government's effort to increase the productivity and living standards of the rural Bumiputera. See Young, Bussink and Hasan, Malaysia: Growth and Equity in a Multi-Racial Society, op.cit., p.125.

[34] Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., pp.104-20.

Turning to the question of wealth and income distribution, Bumiputera individuals and trust agencies owned 4.3% of the share capital in limited companies in 1971 (see Table 3.10). The initial NEP objective was to increase this share to 30% by 1990, with Bumiputera individuals holding 22.6% and the trust agencies a further 7.4% of the total share capital.

As to how realistic these targets are can be assessed by comparing the actual accumulation with the implicit phased targets over the period. The latter shows that Bumiputera individuals and trust agencies must own 17.7% of all corporate share capital by 1975, 25.4% by 1980 and 28.7% by 1985.[35]

Table 3.10 shows clearly that the implicit phased targets have not been achieved. Actual 1975 accumulation shows a shortfall of 8.5 percentage points. For 1980, the shortfall was 13.0 percentage points, and in 1985 it was a shortfall of 10.9 percentage points. Ceteris paribus the 1990 target of 30% cannot be achieved. The 5MP has since revised downwards the 1990 target to 22.2%.

One disturbing point in the acquisition of share capital is the increasing reliance on trust agencies. In the 1970s, individual ownership of share capital grew at an average annual rate of 30.6% but ownership by trust agencies grew at a rate of 39.1%. The corresponding figures for the first half of the 1980s are 25.2% and 29.0%, after adjusting for the shares held under the

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[35] The implicit phased target is determined from the following equation:

$$t = \frac{i}{(1+g)^n} + p\left[1 - \frac{1}{(1+g)^n}\right]$$

where t = target share, i = initial share, g = annual growth rate of corporate shares, p = participation rate in the increment, and n = time period.
For the present purpose, g = 19.1% over the 1971-1985 period and p = 31.0%. For further details, see R. Thillainathan, 'The Second Malaysia Plan: Notes on the Objectives of Balanced Distribution of Wealth and Employment', Kajian Ekonomi Malaysia, 7(2), 1970.

Table 3.10

Malaysia: Ownership of Share Capital of Limited Companies, 1971-1985 and 1990 Targets (Percentage)

Ownership group	1971	1975	1980	1985	1990	
					Initial	Revised
Bumiputera	4.3	9.2	12.4	17.8	30.0	22.2
Individuals	2.6	3.6	5.8	10.1[a]	7.4	13.7
Trust agencies	1.7	5.6	6.7	7.7[b]	22.6	8.5
Other Malaysians	34.0	37.5	44.6	56.7	40.0	52.9
Foreigners	61.7	53.3	42.9	25.5	30.0	24.9
Total value (M$ million)	6,564.1	15,084.0	32,420.4	76,112.0	80,032.3	118,471.0

Sources: Malaysia, Third Malaysia Plan, 1976-1980, op.cit., Table 4-16, p.86, Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 3-14, p.62 and Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., Tables 3-8 and 3-15, pp.107,122.

Notes: a - Includes M$1.9 billion held under the ASN scheme.
b - Excludes funds held by ASN.

Amanah Saham Nasional (ASN, National Unit Trust) scheme.[36] In 1985, Bumiputera individuals effectively owned and controlled 7.6% of total share capital while the trust agencies (including the ASN) controlled 10.2%.

This trend of increasing reliance on the trust agencies is particularly disturbing because it implies an increase in the role of the state in the economy. An increase in bureaucratic control often spells economic inefficiency. This danger is indeed quite real. The Minister of Finance has recently expressed concern over the failures of government companies and statutory bodies.[37] Increased reliance on trust agencies will also increase the power of the relatively small number of Bumiputera politicians and civil servants in charge of these agencies. It will also increase their incomes very considerably.[38] To compound further the problem of income inequality, the majority of the shares reserved for the Bumiputera community have, in fact, been purchased by Bumiputera individuals from the high income group.[39]

Employment and wealth restructuring are, in fact, means towards redressing racial imbalances in incomes. One simple measure of ethnic income differences is the disparity ratio. This often refers to the ratio of either the mean or median income of one ethnic group to that of another.[40]

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[36] The ASN is a wholly owned subsidiary of the Permodalan Nasional Berhad (PNB, National Equity Corporation). Under the ASN scheme, launched in 1981, corporate assets held under trusteeship are 'transferred' to Bumiputera individuals in the form of unit trust shares.

[37] Star, 25 June 1986, p.3. See, also, footnote 21 in this chapter.

[38] The Minister of Finance also noted that half the directors and executives of government companies and statutory bodies are paid salaries that are too high compared with those in other ASEAN countries and those in some developed countries. See Star, 25 June 1986, p.3.

[39] For instance, in the case of the ASN scheme, in 1985, 65% of unit trust holders held no more than 100 units each. At the other end, 10% held 25,000 or more units each. See Malaysian Business, 1 September 1985.

The disparity ratios in Table 3.11 show clearly that Chinese and Indian households have higher incomes than Bumiputera households. However, comparisons based on household incomes tend to bias upwards the extent of the disparities because of systematic differences in household size and composition.[41] Data on per capita income are not readily available. Nevertheless, it appears from household income disparity ratios that Chinese-Bumiputera and Indian-Bumiputera income imbalances have decreased over time. However, the Chinese-Indian disparity ratio has hardly changed at all.[42]

3.4 Education and Employment

Given the conceptual framework of the study, the present discussion would be quite incomplete without an analysis of the employment and unemployment trends as well as an analysis of the linkage between education and employment. Data depicting the employment and unemployment trends were obtained from the various

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[40] Snodgrass, for instance, uses mean incomes to compute the ratio. DaVanzo and Kusnic argued that when income distribution is highly skewed, income distribution studies focus on medians rather than on means to summarize distributions of central tendency. See Snodgrass, Inequality and Economic Development in Malaysia, op.cit. and DaVanzo and Kusnic, 'Ethnic Differences in Income in Peninsular Malaysia: Sensitivity to the Definition and Measurement of Income', Singapore Economic Review, op.cit., p.30. In view of the highly skewed income distribution in Malaysia, ratios computed from median incomes would be a better indicator of income disparity among ethnic groups.

[41] Snodgrass, Inequality and Economic Development in Malaysia, op. cit., pp.82-3 and Young, Bussink and Hasan, Malaysia : Growth and Equity in a Multi-Racial Society, op.cit. pp.102-3.

[42] Several studies have shown income inequality within each ethnic group to be larger than that between ethnic groups. See Snodgrass, Inequality and Economic Development in Malaysia, op.cit., pp.65-107, and Young, Bussink and Hasan, Malaysia : Growth and Equity in a Multi-Racial Society, op.cit., pp.102-5.

Table 3.11

Peninsular Malaysia: Ethnic Income Disparity Ratios, 1970-1984
(in 1970 prices)

Ethnic Income Disparity Ratio	1970	1973	1976	1979[a]	1979[b]	1984
Chinese-Bumiputera	2.23 (2.29)	2.11 (2.21)	2.06 (2.28)	1.92 (2.13)	1.89 (1.91)	1.76 (1.77)
Chinese-Indian	1.38 (1.30)	1.25 (1.31)	1.33 (1.46)	1.22 (1.41)	1.19 (1.24)	1.33 (1.37)
Indian-Bumiputera	1.62 (1.77)	1.70 (1.68)	1.54 (1.56)	1.57 (1.51)	1.59 (1.54)	1.32 (1.54)

Sources: Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit., Table 3-9, p.56 and Malaysia, Fifth Malaysia Plan, 1985-1990, op.cit., Table 3-4, p.99.

Notes: Figures without brackets are ratios based on median incomes whereas figures in brackets are ratios based on mean incomes.

a - Based on 4MP data.
b - Based on 5MP data.

Malaysian development plans and the Department of Statistics. While data regarding employment and unemployment were reasonably adequate, this was not the case with data relating to employment by educational level and type of education. More will be said of this problem later.

Overall, the labour force grew at an average annual rate of 3.2% during the 1970-1985 period. The rapid growth of the labour force reflects the maturing of persons born in the early post-World War II period. The effect of this is reflected in the age structure of the labour force. In 1970, 32.5% of the labour force were in the 15-24 age group, compared with 34.2% in 1980. The same trend was observed for the 25-39 age group where the proportion increased from 36.3% in 1970 to 37.6% in 1980. In 1985, 60.2% of the labour force were in the 15-34 age group. On the whole, the labour force appears relatively young.

During the 1970-1985 period, total employment grew at an average annual rate of 3.3%. The manufacturing sector set the pace for employment creation (at a rate of 7.6% per annum) during the 1970-1980 period. The construction (5.7%), utilities (6.5%), government (6.0%), commercial (5.7%), transport (5.3%) and finance (5.2%) sectors also recorded rapid growth of employment. On the other hand, employment in the agricultural and the mining and quarrying sectors grew at only 1.9% and 0.1% per annum, respectively. As a result of the economic recession in the last few years, the growth rate in employment in the manufacturing sector declined to only 1.9% per annum over the 1981-1985 period. The construction sector, in fact, became the pace setter in employment creation, growing at an average annual rate of 7.0%. Employment in all other sectors, with the exception of the agricultural sector which registered a growth rate of only 0.4% and the mining and quarrying sector which registered a negative growth rate of 5.5%, grew faster than in the manufacturing sector. The sectors which were badly affected by the recession were the mining, agriculture and manufacturing sectors, all of which depended to a considerable extent on export markets.

Over the 1970-1985 period, employment grew faster than the total labour force. However, much of the growth in employment occurred prior to the 1980s. Unemployment rate fell from 7.8% in 1970 to 6.4% in 1975 and 5.7% in 1980. With the recession, the unemployment rate increased to 7.6% in 1985.

Unemployment has been and continues to be a problem primarily among the young. The unemployment rate of those in the 15-24 age group has been about three times the overall rate. With the rise in overall unemployment during the current recessionary period, the problem has become increasingly acute. In fact, the overall unemployment rate is projected to increase to 10.1% by 1990.

The problem of unemployment is further compounded by the shift in the educational profile of the unemployed. In the early 1970s, the majority of the unemployed were those with primary and lower secondary education. However, by the late 1970s an increasingly larger proportion of the unemployed were those who had upper secondary education. In 1974, for instance, 42.6% of the unemployed youths in the 15-19 age group had primary education, 34.5% had lower secondary education and 17.6% had upper secondary education. By 1979, the corresponding percentages were 23.1%, 33.1% and 36.5%. Among those in the 20-24 age group, 34.8% of the unemployed in 1974 had primary education, 27.3% had lower secondary education and 22.8% had upper secondary education. In 1979, the corresponding percentages were 22.6%, 18.3%, and 40.5%. At this point it is also important to note that unemployment has not as yet been a major problem among those with tertiary education. For instance, in 1980 the unemployment rate among university graduates was only 2.1% compared with the overall unemployment rate of 5.7%. However, there is some evidence to show that the waiting period for employment among graduates has been getting longer in recent years.

We shall now turn to a more detailed analysis of the linkage between education and employment. Any analysis of this nature is often hampered by a dearth of information linking the two together. Labour force survey reports, for instance, do not relate education to occupation, employment status and sector of employment. On the other hand, occupational wage survey reports do not link wages to education. Furthermore, the period for which consistent data are available is very short.[43] Nevertheless, is hoped that some valuable insights might be gained from the little information that is available.

Table 3.12 shows labour force participation rates (LFPRs) by highest educational qualification and age for the years 1975, 1980 and 1984. The data show consistently stable and high LFPRs of at least 92% for university graduates, higher than for all other categories except college diploma holders. A closer look at the data shows that differences in LFPRs across educational levels are essentially due to differences in female LFPRs (see Table 3.13). Male LFPRs do not differ much across educational levels, except among the school-going age groups. In contrast, among the female labour force, university graduates display higher LFPRs than those without university education with the exception of college diploma graduates.

An analysis across age groups shows little variation in LFPRs for those with at least a Sijil Pelajaran Malaysia (SPM) / Malaysia Certificate of Education (MCE) / School Certificate (SC)[44] qualification. Those with lower educational qualifications display a dip in LFPR in the 25-34 age range (see Table 3.12). The data also show that this dip is principally due to the dip in female LFPRs around this age range (see Table 3.13). A plausible explanation is that women with low or no educational qualification tended to withdraw from the labour force during prime child-

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[43] For a discussion of some of the main problems encountered in obtaining a consistent set of labour force data due to differences in coverage, definitions and classifications, see K.H. Lee, 'Economic Aspects of the Lives of Youth' in ESCAP, Country Monograph on the Profile of Youth of Malaysia, Bangkok, United Nations, 1983.

[44] At present, the SPM is awarded to successful candidates of a public examination held at the end of upper secondary education. The SPM is equivalent to the former MCE and the preceding SC.

Table 3.12

Peninsular Malaysia: Labour Force Participation Rates by Highest Educational Qualification and Age Group, 1975-1984

	Age group: 1975							
Qualification	15-64	15-19	20-24	25-29	30-34	35-39	40-54	55-64
All	66.8	47.1	75.3	72.3	73.3	75.8	74.1	56.4
No certificate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SRP/LCE	51.0	21.2	81.0	81.9	79.6	83.7	78.7	43.7
SPM/MCE/SC	78.5	48.8	83.0	89.7	89.3	94.4	88.4	53.8
STPM/HSC	60.0	27.5	49.3	83.9	91.1	58.2	88.2	n.a.
College diploma	95.1	n.a.	98.5	97.7	97.2	94.5	94.0	59.4
University degree	92.1	n.a.	87.5	92.5	95.0	90.1	93.1	89.0

	Age group: 1980							
Qualification	15-64	15-19	20-24	25-29	30-34	35-39	40-54	55-64
All	65.0	41.9	73.8	71.5	71.7	73.5	72.8	53.2
No certificate	67.3	51.8	70.8	66.7	69.8	72.6	76.6	64.3
SRP/LCE	48.8	20.8	79.6	74.9	78.6	84.1	84.4	46.7
SPM/MCE/SC	78.3	49.4	82.9	88.5	88.5	90.7	86.4	25.9
STPM/HSC	67.4	10.1	51.2	90.1	86.0	77.2	91.5	neg.
College diploma	95.2	neg.	94.2	99.3	97.4	98.0	96.4	33.8
University degree	95.2	n.a.	88.6	96.9	95.1	96.5	96.2	69.2

	Age group: 1984							
Qualification	15-64	15-19	20-24	25-29	30-34	35-39	40-54	55-64
All	64.0	35.8	73.1	72.9	71.9	73.0	71.9	50.4
No certificate	65.4	46.3	71.0	65.6	67.3	71.7	74.3	58.6
SRP/LCE	48.2	17.6	77.5	75.9	76.1	79.1	81.4	34.2
SPM/MCE/SC	75.8	43.3	76.7	86.9	86.0	85.9	89.0	38.6
STPM/HSC	71.6	33.7	55.3	86.3	89.8	85.7	84.7	32.5
College diploma	94.8	n.a.	95.3	97.8	95.6	94.5	96.6	37.9
University degree	94.0	neg.	86.4	96.0	96.4	94.0	94.2	63.3

Source: Malaysia, Department of Statistics, unpublished data.

Notes: n.a. - Not available.

neg. - Negligible.

SRP/LCE - Sijil Rendah Pelajaran/Lower Certificate of Education. At present, the SRP is awarded to successful candidates of a public examination held at the end of lower secondary education.

SPM/MCE/SC - Sijil Pelajaran Malaysia/Malaysia Certificate of Education/School Certificate.

STPM/HSC - Sijil Tinggi Persekolahan Malaysia/Higher School Certificate.

Table 3.13

Peninsular Malaysia: Labour Force Participation Rates by Highest Educational Qualification, Sex and Age Group, 1984

Qualification[a]	Age group: Male							
	15-64	15-19	20-24	25-29	30-34	35-39	40-54	55-64
All	84.4	43.1	90.4	98.2	98.8	98.7	97.0	73.7
No certificate	89.0	57.1	96.9	98.7	98.8	98.8	97.3	73.7
SRP/LCE	62.7	22.4	93.6	98.4	98.8	99.0	97.3	46.8
SPM/MCE/SC	84.4	43.7	82.0	98.5	99.6	99.1	97.3	45.6
STPM/HSC	79.8	30.1	56.1	92.5	98.1	100.0	97.8	48.5
College diploma	97.0	n.a.	96.3	99.3	99.6	97.5	99.0	47.8
University degree	97.8	n.a.	90.5	98.6	99.8	98.8	98.9	67.4

Qualification[a]	Age group: Female							
	15-64	15-19	20-24	25-29	30-34	35-39	40-54	55-64
All	43.9	28.2	56.3	49.4	46.0	48.0	46.5	28.4
No certificate	39.4	35.1	46.4	38.3	39.4	42.8	40.1	20.3
SRP/LCE	30.4	12.5	57.6	48.1	42.6	45.7	45.5	4.8
SPM/MCE/SC	66.1	42.8	71.5	74.0	69.2	65.3	66.9	13.5
STPM/HSC	60.9	40.5	54.6	77.8	68.5	58.4	44.9	n.a
College diploma	92.1	n.a.	94.2	96.4	90.1	91.6	91.9	5.9
University degree	84.4	neg.	82.6	90.4	88.9	77.0	70.9	22.2

Source: Malaysia, Department of Statistics, unpublished data.

Notes: n.a. - Not available.
neg. - Negligible.
a - See notes to Table 3.12.

bearing age. Women with higher education tended to have stronger labour force attachment patterns, in particular women with at least a college diploma. However, for all levels of education women tended to have lower LFPRs than men.

Two other points deserve mentioning here. The first is that university graduates tended to stay on longer in the labour force than non-university graduates. For instance, the LFPR of university graduates in the 54-64 age group is almost twice that for all other cateogries in the labour force in 1984 (see Table 3.12). This pattern holds true for both males and females (see Table 3.13). The second point is that, in contrast to those in the 54-64 age group with lower education, university graduates display a declining LFPR over the years, from 89% in 1975 to 69.2% in 1980 and then to 63.3% in 1984. This could reflect a pattern of increasing substitution of leisure for work which occurs with rising living standards.

A more detailed look at the available data shows that the growth rate of the labour force by educational level varies considerably (see Table 3.14). Over the period 1976- 1985, the supply of university graduates grew at an average annual rate of 10.9% - far higher than the average annual growth rate of the total labour force but lower than the growth rate for the labour force with SPM/MCE/SC and Sijil Persekolahan Malaysia (STPM) / Higher School Certificate (HSC)[45] qualifications.

Two important trends should be noted here. Firstly, given the relatively high growth rates in the labour force with SPM/MCE/SC, STPM/HSC and university degree qualifications, the labour force had become more educated. In particular, the proportion in the labour force with university education increased from 1.3% to 2.1% between 1975 and 1984. Secondly, the growth rate of the female labour force with university education (16.2%) was much higher

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[45] At present, the STPM is awarded to successful candidates of a public examination held at the end of sixth form education. The STPM is equivalent to the former HSC.

Table 3.14

Peninsular Malaysia: Percentage Distribution and Annual Growth Rate of the Labour Force by Highest Educational Qualification and Sex, 1975-1984

Qualification[a]	Percentage distribution						Annual growth rate 1976-1984 (%)		
	1975			1984					
	Male	Female	All	Male	Female	All	Male	Female	All
No certificate	71.3	50.8	64.0	60.5	45.8	55.4	0.9	1.1	0.9
SRP/LCE	8.1	6.1	7.4	11.5	8.6	10.5	6.9	6.3	6.7
SPM/MCE/SC	7.4	7.2	7.3	14.6	19.1	16.2	10.8	14.0	12.0
STPM/HSC	0.5	0.3	0.5	1.3	1.5	1.4	13.5	20.9	15.7
College diploma	1.8	1.7	1.8	2.3	3.4	2.6	5.8	9.4	7.2
University degree	1.3	0.5	1.3	2.4	1.5	2.1	9.5	16.2	10.9
All	100.0	100.0	100.0	100.0	100.0	100.0	2.7	2.3	2.6

Source: Malaysia, Department of Statistics, unpublished data.

Note: a - See notes to Table 3.12.

than that for the males (9.5%). With this difference in growth rates, the proportion of women in the labour force with university education increased from 16.5% in 1975 to 25.1% in 1984. Given present enrolment patterns in the education system, this proportion is likely to increase further in the future.

Over the last ten years, growth rates in enrolment at the upper secondary, post-secondary and university levels have been high whereas growth rates at the lower educational levels have been low. There appears to be a parallel pattern of growth rates in employment by educational qualification. (see Table 3.15). Annual growth rates have in fact been very high for STPM/HSC (14.5%), SPM/MCE/SC (12.1%) and university degree (10.8%) holders, and low for those with no educational qualification (1.1%). This phenomenon is not unexpected. It shows clearly that the labour market can adjust to whatever is made available. The actual composition or educational structure of the labour force is to a large extent supply determined.[46]

A study of employment status by educational qualification is seriously hampered by data limitations. The available source of data, the 1980 census, makes no distinction between types of tertiary educational qualifications. Nevertheless, a glance through Table 3.16 shows clearly that those with tertiary education were heavily concentrated in the professional and technical jobs (66.7%). A further 16% were in clerical jobs, but these were probably non-university graduates. Very small proportions of the labour force with tertiary education were in the agricultural, service, production and transport occupational categories.

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[46] See, for instance, G. Psacharopoulos and B.C. Sanyal, Higher Education and Employment: The IIEP Experience in Five Less Developed Countries, Paris, Unesco-IIEP, 1981, pp.20-3.

Table 3.15

Peninsular Malaysia: Percentage Distribution and Annual Employment Growth Rate of the Employed Labour Force by Highest Educational Qualification and Sex, 1975-1980

Qualification[a]	Percentage distribution						Annual growth rate 1976-1980 (%)		
	1975			1980					
	Male	Female	All	Male	Female	All	Male	Female	All
No certificate	71.6	50.4	64.3	65.5	49.5	60.1	0.7	2.0	1.1
SRP/LCE	7.7	5.1	6.8	10.1	6.5	8.9	8.3	7.2	8.0
SPM/MCE/SC	7.2	6.6	7.0	10.5	11.8	11.0	10.7	14.9	12.1
STPM/HSC	0.5	0.3	0.5	0.8	0.8	0.8	11.3	23.4	14.5
College diploma	1.8	1.9	1.9	2.2	2.9	2.4	6.5	10.9	8.1
University degree	1.4	0.5	1.1	1.9	1.0	1.6	9.1	18.0	10.8
All	100.0	100.0	100.0	100.0	100.0	100.0	2.5	2.2	2.4

Source: Malaysia, Department of Statistics, unpublished data.

Note: See note to Table 3.12.

Table 3.16

Peninsular Malaysia: Percentage Distribution of Employment by Occupation and Educational Level, 1980

ISCO Code	Occupation	Educational level						
		Nil	Primary	Lower secondary	Upper secondary	Post-secondary	Vocational	Tertiary
0, 1	Professional and technical	0.6	2.1	5.1	23.8	41.9	25.6	66.7
2	Administrative and managerial	neg.	0.2	0.3	0.9	2.0	0.5	10.9
3	Clerical	0.3	1.7	10.3	32.4	35.1	25.2	16.2
4	Sales	5.5	5.8	6.7	4.2	3.5	4.1	1.9
5	Service	3.3	10.3	19.0	13.9	7.4	11.1	1.6
6	Agricultural	79.7	54.1	22.1	7.0	3.7	7.0	1.2
7, 8, 9	Production, transport and labourer	10.6	25.8	36.5	17.8	6.5	26.3	1.5

Source: Malaysia, Department of Statistics, unpublished 1980 census data.

Note: ISCO - International Standard Occupational Classification.
neg. - Negligible.

3.5 Summary

Malaysia inherited three legacies - a lop-sided economy, a rapidly growing population and a plural society - from her colonial era. These legacies have influenced the country's development objectives. The most abstract objective has been that of national unity. The more concrete objective of economic growth through diversification in the early stages has, under the NEP, given way to the objective of equitable distribution of wealth through economic growth so as to bring about national unity.

Compared with most other developing countries, Malaysia's achievements on the economic level have been commendable. However, pursuit of the NEP goals of eliminating poverty and restructuring society has given rise to a very large public sector presence in the economy with the ensuing problems of external debt and inefficiency.

In terms of the first NEP goal, the incidence of poverty has declined though the actual extent cannot be determined. Some progress has been made in the direction of reducing ethnic imbalances in employment and corporate ownership - the second NEP goal. However, ethnic imbalances remain and in the face of the current economic recession the original 1990 targets are unlikely to be met. Ethnic imbalance in income has narrowed but intra-ethnic income inequality has increased.

Work done at the World Bank affirms the necessity for a strategy of rapid growth if the targets of the NEP are to be attained. For instance, simulation studies show that if manufacturing growth were significantly less than 13% per annum (in 1985 it was -3.0% and throughout 1980-1985 it averaged only 4.9%) and if GDP grew at only 5-6% (in 1985 GDP growth rate was 2.8% and in 1986 it is projected to be only 0.2%), the possibility of restructuring employment would be seriously jeopardized.[47] Slower growth could also seriously restrict the structural shift in employment out from the low productivity agricultural sector to high productivity sectors and, therefore, seriously impede efforts to reduce the incidence of poverty.

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[47] Young, Bussink and Hasan, Malaysia: Growth and Equity in a Multi-Racial Society, op.cit., pp.73 and 289-308.

Turning to the labour market, it is noted that in general the labour force appears relatively young. Prior to the current recession, the growth rate in employment exceeded the growth in the labour force, resulting in a decline in the unemployment rate. However, with the onset of the recession and the slowdown in job creation, unemployment has increased to 7.6% in 1985. Unemployment has increasingly become a major problem among educated youths, particularly among those with lower secondary and upper secondary education. As yet, it has not been a major problem among university graduates.

A more detailed analysis of employment by educational level provides some useful insights. Firstly, university graduates had very high LFPRs. Secondly, while males across educational levels did not differ markedly in their LFPRs, female university graduates had very high LFPRs compared with those who had less education. Thirdly, males displayed stronger labour force attachment than females. Fourthly, among females, university graduates displayed stronger labour force attachment than those with less than college education. Fifthly, the educational structure of the labour force was to a large extent determined by the enrolment structure of the education system. Finally, university graduates, as expected, were heavily concentrated in professional, technical, executive and managerial jobs.

Chapter 4

Development of the Education System

4.1 Introduction

The discussion in the preceding chapter provides a picture of the evolving economy and the changing pattern of employment in the country. It is necessary to complement such a discussion with an analysis of the education system so as to see the relationship between the economy, education and employment. As such, this chapter aims to analyse the factors which have affected the development of education, the responsiveness of the education system to national development needs, the structure of the present system and the impact of the NEP on the development of education, particularly university education, in this country.

4.2 Educational Development

Three distinct periods of educational development can be identified in Malaysia. The first is the colonial period. The second is between 1957 (the year of independence) and 1970 while the third period commences with the implementation of the NEP in 1971.

4.2.1 Development of Education During the Colonial Period

Political and socio-economic events during the colonial period had a great impact on the development of education in the country. As has been mentioned in Chapter 3, the influx of Chinese and Indian immigrants into the country in the early part of the twentieth century changed the relatively homogeneous Malay society into a plural society. As a result, two parallel systems of education came into existence. The first was the vernacular system with three types of schools, each having a different medium of instruction: Malay (now known as Bahasa Malaysia), Chinese and

Tamil. Generally, children of each ethnic group attended schools in which their respective mother tongue was the medium of instruction. Schools which were conducted in the medium of Bahasa Malaysia were mainly state-sponsored and the objective of schooling was 'the bestowal of an elementary education such as would enable a villager to keep his simple records and to protect himself against petty swindlers'[1] as well as to turn the Malays into better farmers and fishermen than their fathers. The Chinese-medium schools which were largely financed by the community served the cultural needs of the Chinese and provided a workforce for the Chinese business community. The Tamil-medium schools which functioned mainly in the rubber estates provided an elementary education for the Indian community.

The other system comprised the English-medium schools which provided education mainly for the children of the urban middle class of all ethnic groups. However, because of the demographic pattern in the country, the non-Malays benefited the most from the English-medium schools. These schools provided those who were educated in them a route to higher education in Singapore and overseas as well as employment opportunities in the adminstrative service of the colonial government and the modern economic sector.

The disparity in the access to education among the ethnic groups emerged as a major issue after World War II. Apart from this, there was also the problem that the different language streams of the education system appeared to divide rather than unite the three major ethnic groups in the country. There was no overall educational policy to foster a national education system.

Despite the above problems, progress was made in terms of enrolment, particularly at the primary level. Enrolment at this level exceeded one million on the eve of independence (see Table 4.1). While enrolment at the secondary level increased at a pretty rapid rate, the total number of children enrolled by 1957 was still relatively small. Opportunities for higher education were extremely limited. At the college level, facilities were almost totally confined to teacher training and to technical and agricultural fields. University education was available only at the University of Malaya in Singapore and institutions overseas.

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[1] Quoted in J. S. Nagle, Educational Needs of the Straits Settlements and Federated Malay States, John Hopkins University, Baltimore, 1928, p.106.

Table 4.1

Enrolment by Level, 1938 - 1957

Educational level	1938	1947	1957
Primary	211,239	453,441	1,015,644
Secondary	23,513	40,040	105,879
Tertiary	n.a.	n.a.	2,684

Source : Malaysia, Ministry of Education, Educational Planning and Research Division, Educational Statistics of Malaysia, 1938-1967, Kuala Lumpur, Dewan Bahasa dan Pustaka, 1968.

Notes : Data are for Peninsular Malaysia only.
n.a. - Not available.

4.2.2 Development of Education, 1957-1970

The post-independence educational policy was set out in two reports - the Report of the Education Committee[2] (popularly known as the Razak Report) and the Report of the Education Review Committee[3] (also known as the Rahman Talib Report). Jointly, these two reports may be considered to have laid the foundation of the post-independence education system in the country. The Razak Report attempted to set up a national system of education acceptable to the various ethnic groups, having regard to the intention of making Bahasa Malaysia the national language of the country whilst preserving the language and culture of the other communities.[4] This safeguard to the Chinese and Indians meant that education could still be conducted in the vernacular and English, with the proviso that the different language streams adhered to a common syllabus and time-table and taught English and Bahasa Malaysia as compulsory subjects. At the end of primary education about 35% of the pupils were selected for secondary education on the basis of a public examination, the Malayan Secondary School Extrance Examination (MSSEE), held for the first time in 1958.

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[2] Malaya, Report of the Education Committee, Kuala Lumpur, Government Printer, 1956.

[3] Malaya, Report of the Education Review Committee, Kuala Lumpur, Government Printer, 1960.

The Rahman Talib Report endorsed the main recommendations of the Razak Report but made further suggestions for change. As a result, 'free'[5] primary education was introduced and secondary continuation schools were established to provide a two-year course with a vocational orientation for pupils who failed to obtain places in the academic secondary schools. It also recommended that the medium of instruction at the secondary level be either English or Bahasa Malaysia only.

In 1964, the government reviewed its policy on secondary education and made further policy changes. The MSSEE was abolished and the secondary continuation school system was discontinued. A three-year lower secondary comprehensive system was introduced. As a result, pupils were allowed to move automatically from the primary to the lower secondary level thereby enabling them to complete nine years of education.

Tertiary education developed somewhat more slowly in relation to primary and secondary education during the period. However, in 1962, a committee was set up to review the arrangements for higher education in the country and to make recommendations for its development in the light of foreseeable future needs. The recommendations of the committee were embodied in the Report of the Higher Education Planning Committee[6] (HEPC Report) of 1967. The HEPC Report was to serve as a guideline for the expansion of upper secondary and higher education in the country until 1985.

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[4] Malaya, Report of the Education Commitee, op.cit.

[5] 'Free' in the sense that no school fees are charged.

[6] Malaysia, Report of the Higher Education Planning Committee, Kuala Lumpur, Government Printer, 1967.

It must be emphasized that the HEPC Report concentrated its attention on the expansion and improvement of upper secondary and higher education in the light of manpower needs of the country. The need to use education as an instrument for bringing about greater social equity and national unity was, however, not dealt with. Two years after the publication of the HEPC Report, events in the country called for a drastic revision of educational policy, particularly with regard to higher education.

4.2.3 Education and the NEP

Following the outbreak of communal violence in 1969, the authorities were compelled to re-examine the bases of Malaysia society and its pattern of social and economic development. Clearly, the past pattern of social and economic development could no longer serve the country. New strategies were needed for the future. It was against this background that the NEP was enunciated. As has been indicated in the preceding chapter, the NEP was designed to achieve national unity and integration through the development of a socio-economic foundation that would provide viable and equitable participation of all ethnic groups in the development process. It committed the nation to reduce and eventually eradicate poverty by raising income levels and increasing the employment opportunities of all Malaysians as well as to eliminate the identification of ethnic group with economic function. Education was perceived as a vital instrument in achieving such aims.

The educational objectives, as spelled out in the various national development plans, may be summarized as follows:

(a) To strengthen the education system so as to promote national unity and integration through (i) the implementation, in stages, of Bahasa Malaysia as the medium of instruction at all levels, (ii) narrowing the gap in educational opportunities between the rich and poor and between ethnic groups and geographical regions, and (iii) the eventual integration of the education systems of Sabah and Sarawak with the national system.

(b) To orientate and expand the education and training system to meet national manpower needs, especially in the field of science and technology.

(c) To improve the quality of education in order to reduce wastage and increase its effectiveness in nation building.

The most significant development in the field of education since the implementation of the NEP has been the progress made towards the establishment of a national education system in which Bahasa Malaysia is the main medium of instruction in schools in Peninsular Malaysia and Sabah. In Sarawak, the change in the medium of instruction started in 1977 and this conversion is expected to be completed by 1990. The medium of instruction in tertiary institutions is now also mainly in Bahasa Malaysia. In line with the educational policy of the country, the only vernacular schools that remain today are the Chinese and Tamil primary schools. In addition to the above development, with the implementation of a common curriculum and an integrated teacher training programme, the education systems of Sabah and Sarawak are progressively being integrated with the national system.

Measures have also been taken to enhance the quality of education. The establishment of the Education Media Service in 1972 and the Curriculum Development Centre in 1973 were aimed at improving the learning and teaching processes in schools. Attempts were also made in the 1970s to improve the science and mathematics curricula at the secondary level. At the primary level, a new primary school curriculum which placed emphasis on reading, writing and arithmetic was introduced in 1983.

Enrolment at all levels of the education system expanded rapidly during the period. The proportion of students in science, technology and professional courses at the tertiary level also increased. Imbalances in educational opportunities among ethnic and socio-economic groups have been rectified to a large extent. These quantitative aspects of educational development are elaborated further in the later part of this chapter.

Despite the progress made, the education system still faces a number of problems. Regional disparities in terms of educational opportunities still exist. There are also disparities among socio-economic and ethnic groups. Learning at all levels is highly examination oriented. Facilities for in-service teacher training are inadequate to meet the needs of the new curricula introduced in primary and secondary schools. Furthermore, there is a shortage of facilities for vocational education and for certificate and diploma level courses to meet the demand for skilled and semi-professional manpower.

4.3 Educational Structure

Basically, the education system of Malaysia comprises four levels: primary, secondary, post-secondary or sixth form and tertiary. This is depicted in Figure 4.1.

Primary education lasts 6 years. There are at present three types of primary schools: the national primary schools which use Bahasa Malaysia as the medium of instruction and the national type Chinese and Tamil schools which use Chinese and Tamil, respectively, as the media of instruction. Primary education is free and pupils progress automatically from one grade to the next. On completion of primary schooling, children are automatically promoted to the lower secondary level. Pupils from the national schools move directly into Form I while those from Chinese-medium and Tamil-medium schools make the transition through a year of 'remove class' where they concentrate on improving their proficiency in Bahasa Malaysia.

At the end of the lower secondary level, pupils take the Sijil Rendah Pelajaran examination. Based on their performance in

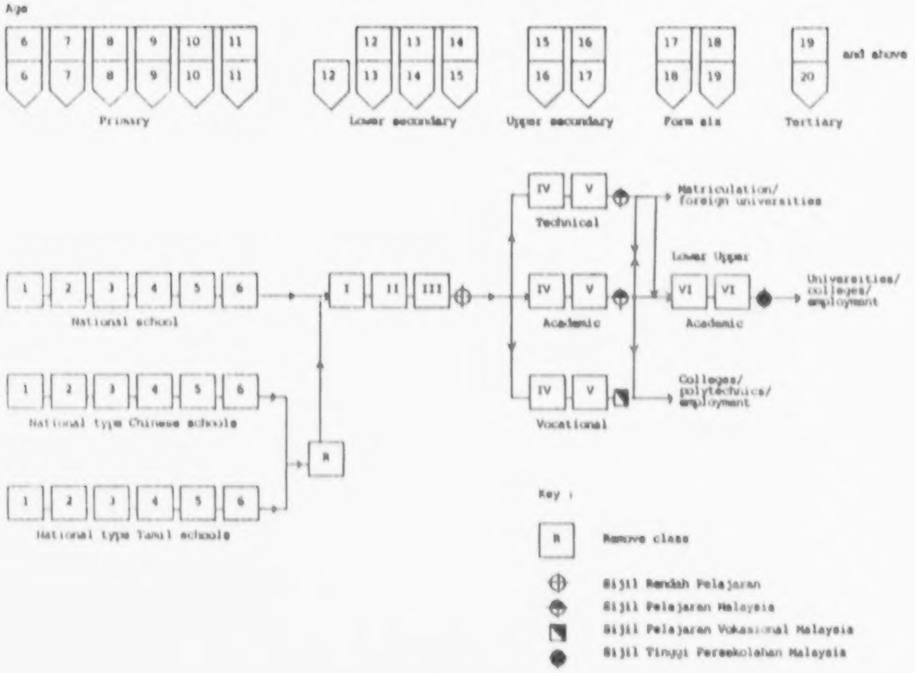

Figure 4.1

Educational Structure of Malaysia

this examination, they either proceed to the appropriate upper secondary stream, (academic, vocational or technical) or terminate their schooling. At the end of two years of upper secondary education, pupils take the *Sijil Pelajaran Malaysia* examination or the *Sijil Pelajaran Vokasional Malaysia* (Malaysia Certificate of Vocational Education) examination. Those intending to pursue studies at the university proceed to the two-year sixth form course and take the *Sijil Tinggi Persekolahan Malaysia* examination at the end of the course. To provide alternative avenues for *Bumiputera* students to take up science, engineering and medicine, pre-university or matriculation classes have been instituted in local universities. *Bumiputera* students with good results in the *Sijil Pelajaran Malaysia* may be channelled directly into these classes after which they may be placed in appropriate courses in the universities.

Alternative educational opportunities are also available to those who do not proceed to the university. Those with *Sijil Pelajaran Malaysia* or *Sijil Tinggi Persekolahan Malaysia* may seek college level education in public and private institutions.

4.4 Expansion in Enrolment

At all levels of the education system, expansion was most rapid during the decade 1960 - 1970 (see Table 4.2). Expansion was especially intense at the secondary, post-secondary and tertiary educational levels. Since 1980, the rate of expansion has slowed down at the lower educational levels. However, at the tertiary level the rate of increase has remained impressive. In absolute terms, post-secondary enrolment increased from 13,635 in 1970 to 51,918 in 1985, while tertiary education increased from 14,291 to 86,321 over the same period.

Despite the impressive growth rates at the higher levels, the educational pyramid tapers off rapidly after the primary level. In 1980 primary school enrolment comprised 63.8% of the total enrolment, lower secondary enrolment comprised 25.8%, upper secondary and post-secondary enrolment comprised 8.9% and

Table 4.2

Expansion in Enrolment, 1960-1985[a]

Educational level	1960[b]	1965[b]	1970	1975	1980	1985	Annual Rate of increase (%)		
							1961-1970	1971-1980	1981-1985
Primary	1,078,615	1,217,309	1,679,798	1,890,974	2,008,587	2,191,676	5.6	2.0	1.8
Lower secondary	88,982	231,555	432,703	643,073	812,065	918,406	38.6	8.8	2.6
Upper secondary	25,733	40,755	99,637	178,313	247,889	333,041	28.7	14.9	6.9
Post-secondary[c]	1,556	3,537	13,635	22,090	31,498	51,918	77.6	13.1	13.0
Tertiary[d]	8,071[e]	12,963	14,291	36,004	50,056	86,321	7.7	25.0	14.5
Total	1,202,957	1,506,119	2,240,064	2,770,454	3,150,095	3,581,362	8.6	4.1	2.7

Sources: Malaysia, Third Malaysia Plan, 1976-1980, op.cit., Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit. and Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit.

Notes: a - Enrolment in public and government-aided institutions only.
b - Enrolment in Peninsular Malaysia only
c - Includes enrolment in pre-university and matriculation courses.
d - Includes enrolment in teacher training colleges.
e - Includes enrolment in teacher training colleges in Peninsular Malaysia only.

tertiary enrolment consituted only 1.5% (see Table 4.3). By 1985, upper and post-secondary enrolment formed 10.8% while tertiary enrolment constituted 2.4% of total enrolment.

Table 4.3

Percentage Distribution of Enrolment by Educational Level, 1960-1985

Educational level	Percentage distribution of enrolment					
	1960[a]	1965[a]	1970	1975	1980	1985
Primary	89.7	80.8	75.0	68.3	63.8	61.2
Lower secondary	7.4	15.4	19.3	23.2	25.8	25.6
Upper secondary	2.1	2.7	4.4	6.4	7.9	9.3
Post-secondary	0.1	0.2	0.6	0.8	1.0	1.5
Tertiary	0.7	0.9	0.6	1.3	1.5	2.4

Sources: As in Table 4.2.

Note: a - Refers to Peninsular Malaysia only.

Table 4.4 shows the enrolment rates for all levels of education by age group for selected years. The rate of participation at the primary level for the age group 6 - 11 increased from 87.8% to 96.8% between 1960 and 1980. The rate is estimated to have increased further since then. At the lower secondary level, the participation rate rose dramatically from 9.4% in 1960 to 81.7% in 1980. By 1985, 96.3% of the age group 12 - 14 were attending lower secondary schools. The participation rate for upper secondary education increased more gradually. However, by 1985, 50.1% of the children in the relevant age group were in school.

At the post-secondary and tertiary levels, expansion started from a very low base. Between 1960 and 1985, the participation rate of the population in the relevant age group for post-secondary education increased from 0.06% to 7.4%. Over the same period, the participation rate for tertiary education increased from 0.04% to 4.0%.

Table 4.4

Participation Rates by Educational Level and Age group, 1960-1985

Year	Primary (6-11)[b]	Lower secondary[a] (12-14)[b]	Upper secondary (15-16)[b]	Post secondary (17-18)[b]	Tertiary (19-24)[b]
1960	87.8	9.4	2.7	0.06	0.04
1970	88.2	52.2	20.1	3.1	0.6
1975	96.0	69.5	31.6	6.9	1.5
1980	96.8	81.7	36.7	4.3	2.9
1985	100.0	86.3	50.1	7.4	4.0

Source: Malaysia, Ministry of Education, Educational Planning and Research Division.

Notes: Data for 1960 and 1970 refer to Peninsular Malaysia, while data for 1975, 1980 and 1985 refer to Malaysia.

a - Includes enrolment in remove classes.
b - Refers to age group.

As the education system expanded under the impetus of the NEP, educational imbalances among ethnic and socio-economic groups as well as between the sexes were redressed significantly. This redressal was particularly conspicious with regard ethnic imbalances (see Table 4.5). While enrolment by ethnic group at the primary and lower secondary levels in 1970 reflected the ethnic composition of the population, there was under-representation of Bumiputera students at the upper secondary and post-secondary levels. Bumiputera students comprised only 48.8% and 43.4% of the upper secondary and post-secondary enrolments, respectively. At these two levels, the Chinese were over-represented. By1985, however, the situation had clearly changed; Bumiputera share of total enrolment increased to 68.1% at the upper secondary level and 56.9% at the post-secondary level.

Table 4.6 shows the participation rates of the school-going population by ethnic group, sex and geographical location in 1970 and 1980. Marked improvements may be noted among previously disadvantaged groups. For the period 1970 - 1980, the enrolment

Table 4.5

Percentage Distribution of Enrolment by Ethnic Group and Educational Level, 1970-1985

Educational level	1970					1975				
	Bumiputera	Chinese	Indian	Others	Total	Bumiputera	Chinese	Indian	Others	Total
Primary	53.4	36.0	10.0	0.6	100.0	55.2	34.7	9.6	0.5	100.0
Lower secondary	51.0	38.8	9.6	0.6	100.0	54.4	35.4	9.7	0.5	100,0
Upper secondary	48.8	43.4	7.0	0.8	100.0	60.7	32.4	6.2	0.7	100.0
Post secondary	43.4	49.6	6.0	1.0	100.0	54.0	40.5	4.9	0.6	100.0
% distibution in population	53.0	35.6	10.6	0.8	100.0	53.0	35.6	20.6	0.8	100.0

Educational level	1980					1985				
	Bumiputera	Chinese	Indian	Others	Total	Bumiputera	Chinese	Indian	Others	Total
Primary	58.4	32.2	7.7	1.7	100.0	61.0	29.7	7.6	1.7	100.0
Lower secondary	60.3	30.0	8.5	1.2	100.0	65.2	27.3	5.7	1.8	100.0
Upper secondary	66.3	27.0	6.0	0.7	100.0	68.1	25.2	6.0	0.7	100.0
Post secondary	61.4	32.9	4.7	1.0	100.0	56.9	36.4	5.8	0.9	100.0
% distibution in population	58.1	32.3	9.1	0.5	100.0	58.1	32.3	9.1	0.5	100.0

Sources: Malaysia, Third Malaysia Plan, 1976-1980, op.cit., p.400, Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., p.493 and Malaysia, Department of Statistics, General Report of the Population Census: Population and Housing Census of Malaysia, 1980, Kuala Lumpur, Department of Statistics, 1983.

rate of girls advanced from 62.4% to 72.5% while that of rural children increased from 64.1% to 73.4%. The most dramatic change was among rural female students whose enrolment rate increased from 59.3% to 71.8%. However, by 1980 some groups were still showing a low enrolment rate. The Indians generally had a low enrolment rate (66.5%) and the rural female Indians had one of the lowest enrolment rates (59.9%). While some inter-group differences remain, on the whole all groups experienced enhanced opportunities for schooling.

It is evident from the discussion so far that Malaysia now possesses a fairly well developed education system catering for a large proportion of the population in the 7 - 19 age group. The enrolment rates as well as the retention rates have improvd impressivelyover the period. The democratization of primary and lower secondary education has made it possible for every child to have at least nine years of uninterrupted formal schooling.

4.5 Development of Tertiary Education

As has been indicated earlier, opportunities for tertiary education during the colonial period were extremely limited. At the college level, available facilities were largely confined to teacher training and to technical and agricultural fields. By 1957, total enrolment at this level was only 2,684. As regards university education, two institutions were set up in Singapore to serve the needs of Singapore and Peninsular Malaysia. These were King Edward VII School of Medicine, founded in 1905, and Raffles College, founded in 1928. In 1949, these two institutions were amalgamated to form the nucleus of the University of Malaya in Singapore.

The University began with 645 students and by 1957 there were 1,457 students. The annual output of graduates during the period was low. In 1957, for example, there were only 139 graduates in arts, 48 in science and 55 in medicine and dentistry.

Table 4.6

Peninsular Malaysia: Participation Rates of the Population in the 7-19 Age Group by Ethnic Group, Sex and Geographical Location, 1970 and 1980

Ethnic group	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Bumiputera (1970)	81.8	74.1	78.0	69.1	61.0	65.0	71.1	63.0	67.0
Bumiputera (1980)	78.5	75.8	77.1	76.2	73.2	74.7	76.7	73.8	75.3
Chinese (1970)	77.5	68.7	73.2	71.4	60.7	66.2	74.3	66.5	69.5
Chinese (1980)	74.6	73.3	74.0	74.9	72.7	73.8	74.7	73.1	73.9
Indian (1970)[a]	75.4	65.4	70.5	61.3	46.2	53.8	66.1	52.5	59.4
Indian (1980)[a]	72.5	68.8	70.7	67.7	59.9	63.8	69.6	63.4	66.5
Others (1970)	95.2	87.2	91.1	56.3	47.1	51.8	71.1	63.2	67.2
Others (1980)	81.2	77.7	79.4	60.8	57.3	59.1	68.8	65.4	67.1
Total (1970)	78.6	70.0	74.3	68.8	59.3	64.1	71.7	62.4	67.0
Total (1980)	75.9	73.9	74.9	75.0	71.8	73.4	75.3	72.5	73.9

Source: Malaysia, Department of Statistics.

Note: a - Includes Sri Lankans and Pakistanis.

With the achievement of independence in 1957, the government began to give attention to the development of tertiary education to meet the educational needs of the country. Programmes for technical and agricultural education and for teacher training at the college level were gradually expanded. Enrolment at this level increased from 7,417 in 1960 to 10,128 in 1965 but dropped to 7,010 in 1969 mainly because of a reduction in the intake for teacher training colleges.

Meanwhile, plans were made for the establishment of a university in Malaysia. The first step in this direction was the setting up of a division of the University of Malaya in Kuala Lumpur in 1959 thereby creating two divisions of the University of Malaya - one in Singapore and another in Kuala Lumpur. Three years later, the division in Kuala Lumpur became Universiti Malaya while the division in Singapore was renamed the University of Singapore, now known as the National University of Singapore.

Enrolment at Universiti Malaya increased at an impressive rate (see Table 4.7). In 1959 there were only 322 students; the number increased to 6,672 in 1969, giving an annual rate of growth of 197.2%. While enrolment grew at a rapid rate, the apportionment of places among the major ethnic groups did not reflect the ethnic composition of the population in the country. Of the total student population in 1959, 19.2% were Malays, 60.6% were Chinese and 20.2% were Indians and 'others'. By 1969, the corresponding proportions were 35.6%, 52.9% and 11.5%, respectively. Furthermore, throughout the period, the majority of the Malay students were enrolled in the faculties of arts, education and economics and administration while the majority of the Chinese students were enrolled in the faculties of science, engineering, agriculture and medicine.

The pattern of ethnic imbalance in enrolment and in the various disciplines was reflected in the output of graduates for the period 1960 - 1970 (see Table 4.8). Of the total output of 7,357 graduates for the period, only 25.9% were Malays as against 59.5% Chinese and 14.6% Indians and 'others'. Malay graduates

Table 4.7

Distribution of Universiti Malaya Students by Ethnic Group and Faculty 1959 - 1969

Year	Ethnic group	Faculty															
		Arts		Science		Engineering		Agriculture		Education		Medicine		Economics and Administration		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1959	Malay	58	35.8	3	9.7	1	0.7									62	19.2
	Chinese	65	40.1	22	70.9	108	83.8									195	60.6
	Indian and others	39	24.1	6	19.4	20	15.5									65	20.2
	Total	162	100.0	31	100.0	120	100.0									322	100.0
1965	Malay	606	40.5	28	4.9	3	1.1	34	22.1	27	18.0	23	12.4			721	25.4
	Chinese	620	41.4	472	83.1	250	89.0	102	66.2	79	52.7	146	78.5			1669	58.9
	Indian and others	270	18.1	68	12.0	28	10.0	18	11.7	44	29.3	17	9.1			445	15.7
	Total	1496	100.0	568	100.0	281	100.0	154	100.0	150	100.0	186	100.0			2835	100.0
1969	Malay	1489	52.7	150	12.6	11	3.1	70	20.5	102	31.9	109	19.2	442	11.7	2373	35.6
	Chinese	930	32.9	965	81.2	328	91.4	187	68.2	171	53.4	388	68.3	563	49.5	3532	52.9
	Indian and others	404	14.3	74	6.2	20	5.5	17	6.3	47	14.7	71	12.5	134	11.7	767	11.5
	Total	2823	100.0	1189	100.0	359	100.0	274	100.0	320	100.0	568	100.0	1139	100.0	6672	100.0

Source: Abdul Majid bin Ismail, Report of the Committee Appointed by the National Operations Council to Study Campus Life of Students of the University of Malaya, Kuala Lumpur, Government Printer, 1971.

Table 4.8

Graduates of Universiti Malaya by Ethnic Group and by Faculty, 1960-1970

Ethnic group	Faculty							
	Arts	Science	Engineering	Agri-culture	Education	Medicine	Economics and Administration	Total
Malay	40.6 (1,369)	4.0 (69)	0.9 (4)	17.9 (40)	26.2 (299)	9.3 (12)	34.1 (112)	25.9 (1,905)
Chinese	41.6 (1,404)	87.2 (1,488)	90.1 (408)	72.6 (162)	54.9 (626)	83.7 (108)	56.4 (185)	59.5 (4,381)
Indian and others	17.9 (603)	8.8 (150)	9.1 (41)	9.4 (21)	18.9 (216)	7.0 (9)	9.5 (31)	14.6 (1,071)
Total	100.1 (3,376)	100.0 (1,707)	100.1 (453)	99.9 (223)	100.0 (1,141)	100.0 (129)	100.0 (328)	100.0 (7,357)

Source: As in Table 4.7.

Note: The distribution of graduates is given in percentages. Percentages may not add to 100 due to rounding off. Figures in brackets refer to the number of graduates.

constituted 40.6% of the output in arts but only 4.0% of the output in science, 0.9% of the output in engineering and 9.3% of the output in medicine. The Chinese comprised the largest proportion of the graduates in science, engineering, medicine and agriculture.

The civil disturbances of 1969 drew attention to the instability within Malaysia. The source of the problem was diagnosed to be the socio-economic imbalances among the different ethnic groups. Lack of educational opportunities among the Bumiputera was perceived to be an important factor in creating the socio-economic imbalances. As such, attention was focussed on education and strategies were formulated to try to redress the educational imbalances among the ethnic and socio-economic groups in the country. In particular, strategies were formulated to try to increase the share of Bumiputera enrolment in the field of science and technology in institutions of higher learning. These strategies have far-reaching implications for the social and occupational mobility of the Bumiputera as well as for the development of tertiary education in the country.

The period 1969 - 1985 witnessd the rapid expansion of tertiary education. Enrolment in teacher training colleges was increased to meet the need for trained teachers in an expanding education system. The number of students in science, engineering, technical and commercial courses at both certificate and diploma levels was also increased.

In the development of university education, five new universities were founded and a number of branch campuses established. Universiti Sains Malaysia, Universiti Kebangsaan Malaysia, Universiti Pertanian Malaysia and Universiti Teknologi Malaysia were established in 1969, 1970, 1971 and 1972, respectively, whereas Universiti Utara Malaysia was established in 1984. In addition, the government also assisted in the founding of Universiti Islam Antarabangsa in 1982. During this period of rapid expansion, Institut Teknologi MARA (MARA Institute of Technology) which hitherto provided only certificate and diploma courses began to introduce a number of degree level courses as well.

Despite the rapid expansion of tertiary education, demand far exceeded supply in terms of the number of places. This resulted in a substantial number of students seeking tertiary education overseas. Local private institutions also expanded significantly and played an important role in training an increasing number of school-leavers.

Table 4.9 depicts the enrolment trend in tertiary education in both local and overseas institutions over the period 1970-1985. It can be observed that the enrolment in local tertiary institutions increased substantially over the period. There was also a significant number of Malaysians studying overseas. The number increased from about 36,900 in 1978 to 60,000 in 1980. Of the total in 1985, 6,113 were enrolled in certificate level courses, 5,738 in diploma level courses, 22,684 in degree courses and the rest were enrolled in secondary and post-secondary educational institutions. Taken as a whole, enrolment in tertiary education, in both local and overseas institutions, increased at an annual rate of 14.0% during the 1981-1985 period.

As a result of the enrolment growth depicted above, the output from the tertiary education sector also increased. The output of local graduates during the decade 1960-1970 was only 7,357. For the period 1981-1985, however, the output was 26,800 (55.2% in arts and humanities and 44.8% in science and technology).[7] The output is projected to increase to 52,800 for the 1986-1990 period (52.6% in the arts and humanities and 47.4% in science and technology).[8] Over the 1981-1985 period, a total of 22,800 diplomates was produced.[9] The number is projected to increase to 36,900 for the 1986-1990 period.[10]

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[7] Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit., pp.150-51.

[8] Ibid.

[9] Ibid.

[10] Ibid.

Table 4.9

Enrolment in Tertiary Education

Educational level	Enrolment			Annual rate of increase (%)	
	1970	1980	1985	1971-1980	1981-1985
Certificate level					
Local public institutions[a]	3,296	15,850	23,437	38.1	9.6
Local private institutions	-	4,092	21,957	-	87.3
Institutions overseas	-	5,263	6,113	-	3.2
Sub-total	3,296	25,205	51,507	-	20.9
Diploma level					
Local public institutions	3,318	12,262	25,046	30.0	20.9
Local private institutions	-	5,968	10,023	-	13.6
Institutions overseas	-	4,953	5,738	-	3.2
Sub-total	3,318	23,183	40,807	-	15.2
Degree level					
Local public institutions	7,677	21,944	37,838	18.6	14.5
Institutions overseas	-	19,510	22,684	-	5.6
Sub-total	7,677	41,454	60,522	-	9.2
Total	14,291	89,842	152,836	-	14.0

Sources: Malaysia, Fourth Malaysia Plan, 1981-1985, op.cit. and Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit.

Note: a - Includes enrolment in teacher training colleges.

4.6 Tertiary Education and the NEP

This section analyses the extent to which the attempt on the part of the government to redress the tertiary educational imbalances among ethnic and socio-economic groups has been successful.

Table 4.10 shows the enrolment in local and overseas tertiary institutions by ethnic group for the period 1970-1985. Considering the local public institutions first, it may be noted that *Bumiputera* students formed the vast majority of the enrolment in diploma level courses over the period. As regards certificate and degree level courses, non-*Bumiputera* students formed the majority of the enrolment in 1970. However, the situation changed after that. *Bumiputera* share of total enrolment in certificate level courses increased from 41.0% in 1970 to 65.8% in 1985. In degree level courses, their share of total enrolment increased from 40.2% to 63.0% over the same period. Chinese share of total enrolment in certificate level courses declined from 56.6% to 30.5% and their share in degree level courses declined from 48.9% to 29.7% over the same period. Clearly, by 1985, *Bumiputera* students formed the vast majority of the student population in local tertiary institutions.

However, when the enrolment in local private institutions and institutions overseas are taken into account, a slightly different pattern can be observed. *Bumiputera* share of total enrolment in certificate level courses increased from 19.6% in 1980 to 38.5% in 1985. At the diploma level, their share in total enrolment increased from 59.6% to 66.5% while at the degree level their share increased from 45.4% to 49.4% over the same period.

Apart from the above trends, the enrolment rate of *Bumiputera* students in science and technology courses at the tertiary level also increased. Table 4.11 shows the enrolment rates of the various ethnic groups in public tertiary institutions in the field of arts and humanities and in the field of science and technology for 1980 and 1985. It is clear that by the first half of the 1980s, a substantial proportion of the *Bumiputera* students were in

Table 4.10

Enrolment in Tertiary Institutions by Ethnic Group, 1970-1985
(Percentage)

Type of tertiary institution	1970					1980					1985				
	Bumiputera	Chinese	Indian	Others	Total N	Bumiputera	Chinese	Indian	Others	Total N	Bumiputera	Chinese	Indian	Others	Total N
Certificate level															
Public institutions[a]	41.0	56.6	2.4	-	369	61.1	34.8	3.7	0.4	2,603	65.8	30.5	3.2	0.5	6,878
Local private institutions	-	-	-	-	-	13.5	74.0	11.1	1.3	4,092	40.8	44.7	14.1	1.7	21,957
Institutions overseas	-	-	-	-	-	3.7	82.7	12.4	1.2	5,263	3.7	82.7	12.4	1.2	6,113
Sub-total	41.0	56.6	2.4	-	369	19.6	69.3	10.1	1.1	11,958	38.5	48.5	11.7	1.4	34,948
Diploma level															
Public institutions	86.5	11.8	1.0	0.7	3,318	93.1	5.8	0.9	0.2	12,262	94.1	5.2	0.6	0.1	25,046
Local private institutions	-	-	-	-	-	9.7	73.0	15.8	1.5	5,968	14.9	67.7	16.0	1.4	10,023
Institutions overseas	-	-	-	-	-	36.6	51.7	10.4	1.3	4,953	36.6	51.7	10.4	1.3	5,738
Sub-total	86.5	11.8	1.0	0.7	3,318	59.6	32.9	6.7	0.8	23,183	66.5	27.1	5.8	0.6	40,807
Degree level															
Local universities	40.2	48.9	7.3	3.6	7,677	62.0	31.2	5.7	1.1	21,944	63.0	29.7	6.5	0.7	37,838
Institutions overseas	-	-	-	-	-	28.6	59.1	13.7	0.5	19,510	26.6	59.1	13.7	0.6	22,684
Sub-total	40.2	48.9	7.3	3.6	7,677	45.4	44.3	9.5	0.8	41,454	49.4	40.7	9.2	0.7	60,522
Total	53.7	38.3	5.3	2.7	11,364	45.6	44.8	8.8	0.8	76,595	51.7	38.7	8.8	0.8	136,277

Sources: As in Table 4.9.

Note: a - Excludes enrolment in teacher training colleges.

Table 4.11

Enrolment in Local Public Tertiary Institutions by Ethnic Group and Broad Area of Specialization, 1980 and 1985

Area of specialization	1980 Enrolment N	1980 Bumiputera %	1980 Chinese %	1980 Indian %	1980 Others %	1985 Enrolment N	1985 Bumiputera %	1985 Chinese %	1985 Indian %	1985 Others %
Certificate level										
Arts and humanities[a]	53	100.0	-	-	-	983	71.7	21.6	5.2	1.5
Science and technology[b]	2,550	60.3	35.6	3.8	0.3	5,895	68.7	23.8	6.1	1.4
Sub-total	2,603	61.1	34.8	3.7	0.4	6,878	65.8	30.5	3.2	0.5
Diploma level										
Arts and humanities[a]	4,412	100.0	-	-	-	12,822	99.3	0.6	0.1	-
Science and technology[b]	7,850	88.9	8.9	2.0	0.2	12,224	86.7	10.5	2.1	0.7
Sub-total	12,262	93.5	5.5	0.8	0.2	25,046	94.5	4.9	0.5	0.1
Degree level[c]										
Arts and humanities[a]	11,512	58.3	36.4	4.4	0.9	20,357	57.4	30.1	11.4	1.1
Science and technology[b]	10,434	67.8	29.8	1.9	0.5	17,481	51.9	32.6	12.8	2.7
Sub-total	21,944	62.0	31.2	5.7	1.1	37,838	63.0	29.7	6.5	0.8

Source: Malaysia, Fifth Malaysia Plan, 1986-1990, op.cit. p.493.

Notes: a - Geography, history, economics, business management, language, accountancy, hotel management and catering, social sciences, law, etc.

b - Medicine and dentistry, agriculture and related sciences, pure sciences, applied sciences, pharmacy, food technology, science with education, engineering, architecture, etc.

c - Includes enrolment in post-graduate courses.

science and technology. This situation is in sharp contrast to that in the 1960s.

The survey data also show that the educational opportunities of the lower SES groups have been enhanced since the implementation of the NEP. Using educational attainment and occupational category of the fathers of the respondents as indicators of SES, it can be observed that larger proportions of sixth form students and undergraduates than past graduates had fathers who had only primary education and who were from the manual workers category (see Tables 4.12 and 4.13).

It would appear that the NEP has been fairly successful in enhancing the educational opportunities of the previously disadvantaged ethnic and socio-economic groups. Available data appear to indicate that the Bumiputera students have managed to achieve a fair share of the enrolment at the tertiary level. Likewise, the proportion of students from the lower SES groups has increased.

4.7 Educational Expenditure

As the education system expanded over the decades, so has the expenditure on education increased. Government outlays for education increased from M$179 million in 1960 to M$522 million in 1970 and than to M$2,786 million in 1980. By 1985, the expenditure had risen to M$4,493 million (see Table 4.14). In other words, total expenditure increased fifteenfold between 1960 and 1980 and increased by another 61.3% between 1980 and 1985. In real terms, the expenditure on education doubled during the 1960s and trebled during the 1970s.

Between 1960 and 1978, educational expenditure ranged from 17.3% to 21.1% of the total government expenditure. Since 1978, a gradual decline can be observed. On the other hand, total educational expenditure as a proportion of gross national product (GNP) rose from 3.1% in 1960 to 6.7% in 1972 and thereafter fluctuated between 5.5% and 6.5%.

Table 4.12

Distribution of Respondents by Fathers' Educational Level

Educational level of father	Graduates		Undergraduates		Sixth form students	
	N	%	N	%	N	%
No formal schooling	358	22.2	349	14.9	202	13.9
Some years of primary education or completed primary education	518	32.1	1,338	57.1	925	59.4
Some years of secondary education or completed secondary education	576	35.7	503	21.5	360	23.1
College or university education	161	10.0	154	6.5[a]	71	4.6
Total	1,612	100.0	2,578	100.0	1,558	100.1

Note: a - Includes sixth form education.

Table 4.13

Distribution of Respondents by Fathers' Occupation

Occupation of father	Graduates		Undergraduates		Sixth form students	
	N	%	N	%	N	%
Professional, managerial and proprietorship	604	51.1	364	16.4	243	15.7
Clerical and sales, small business and others	272	23.0	746	33.7	604	39.2
Manual	306	25.9	1,105	49.9	695	45.1
Total	1,182	100.0	2,215	100.0	1,542	100.0

Table 4.14

Educational Expenditure, 1960-1985

Year	Expenditure (M$ million)			Total expenditure as % of	
	Recurrent	Development	Total	Public Expenditure	GNP
1960	165	14	179	19.1	3.1
1962	218	43	261	19.8	4.4
1964	283	51	334	17.7	4.9
1966	360	63	423	18.6	5.4
1968	404	53	457	18.9	4.5
1970	477	45	522	18.1	4.3
1972	798	113	911	21.1	6.7
1974	1,051	187	1,238	19.9	5.8
1976	1,261	227	1,488	18.1	5.5
1978	1,791	252	2,043	17.3	6.4
1980	2,228	558	2,786	13.2	5.6
1982	2,726	791	3,517	13.0	6.5
1984	3,183	1,009	4,192	14.9	5.6
1985	n.a	n.a	4,493	n.a	6.2

Source: Malaysia, Ministry of Finance, Economic Report, Kuala Lumpur, National Printing Department, various issues.

Note: n.a - Not available.

A larger proportion of the educational expenditure has been expended on recurrent costs than on development costs. Until 1978, educational development budget fluctuated between 8% and 17% of the total educational expenditure. Thereafter, educational development expenditure as a proportion of total educational expenditure increased sharply. In 1982 and 1984, development expenditure accounted for 22.5% and 24.1%, respectively, of the total educational expenditure. This was largely due to the increase in development expenditure on secondary and university education.

The importance placed on university education is evident from the budget allocated to it. Over the last fifteen years, university education has received an increasingly larger share of the total educational expenditure. Table 4.15 reveals that the expenditure on university education has risen from M$33.6 million in 1970 to M$699.6 million in 1985, depicting a twentyfold increase. The proportion of the total educational expenditure absorbed by the universities increased substantially from 7.1% in 1970 to 15.9% in 1975. Thereafter it fluctuated between 13.6% and 15.6%.

Much of the phenomenal growth in expenditure on university education was due to the sudden increase in the number of universities between 1969 and 1972. As stated earlier, before 1969, there was only one university in the country - Universiti Malaya. In 1969, Universiti Sains Malaysia was established. In rapid succession, Universiti Kebangsaan Malaysia was established in 1970, Universiti Pertanian Malaysia in 1971 and Universiti Teknologi Malaysia in 1972. In a span of four years the number of universities increased from one to five.

The growth in recurrent expenditure follows more or less the same pattern as the growth in total expenditure on university education. This is not surprising since recurrent expenditure still accounts for a substantial proportion of the total expenditure. In 1970, recurrent expenditure accounted for 84.5% of the total expenditure on university education. By 1985, it comprised 64.8% of the total expenditure. Much of the growth in recurrent expenditure occurred in the first half of the seventies. During the 1970-1975 period, recurrent expenditure grew at an average annual rate of 35.7%. Since then, its growth rate has stabilized at around 11-15% per annum.

Table 4.15 in fact masks the more rapid rate of growth in development expenditure due to its higher degree of variability. Between 1970 and 1980, while recurrent expenditure grew at an average annual rate of 24.2%, development expenditure grew at a rate of 34.4% per annum. Although the growth in recurrent expenditure stabilised substantially after 1975, development expenditure continued to grow quite rapidly. Much of the growth can be attributed to the setting up of a new Universiti Kebangsaan

Table 4.15

University Expenditure and Per Student Cost, 1970-1985

	Expenditure			University expenditure as percentage of total educational expenditure	University enrolment[a]	Cost per student	
	Recurrent M$	Development M$	Total M$			Recurrent M$	Total M$
1970	28,400,000	5,200,000	33,600,000	7.1	8,500	3,341	3,953
1975	130,500,000	73,700,000	204,200,000	15.9	19,500	6,692	10,472
1980	220,900,000	129,900,000	350,800,000	13.6	27,100	8,151	12,945
1985	453,500,000	246,120,000	699,620,000	15.6	46,100	9,837	15,176

Sources: Ozay Mehmet and Yip Yat Hoong, Human Capital Formation in Malaysian Universities, Kuala Lumpur, Institute of Advanced Studies, 1986, Malaysia, Ministry of Finance, Economic Report, op.cit., various issues and Malaysia, Fifth Malaysian Plan, 1986-1990, op.cit.

Note: a - Includes enrolment in post-graduate courses, diploma level courses and pre-university or matriculation courses.

Malaysia campus in the second half of the 1970s, a new Universiti Technologi Malaysia campus in the first half of the 1980s and the founding of Universiti Utara Malaysia in 1984.

During the period of the 2MP, university development expenditure accounted for 14.0% of the total development expenditure on education. During the 3MP period, its share rose to 25.3%. During the 4MP period, it accounted for 22.4%. With the 5MP, the amount allocated to development expenditure is about 27.4% of the total development expenditure on education.

In terms of per student cost of university education, the increase has also been very rapid over the 1970-1985 period. Recurrent cost per student grew from M$3,341 in 1970 to M$9,837 in 1985 and capital development expenditure per student grew from M$612 to M$5,339 over the same period. One reason for the rapid increase in per student cost is, of course, inflation.

Apart from inflation, two other factors were responsible for the increase in per student recurrent cost. The first was the various salary commissions which raised the salaries and allowances of university staff. The second was the increasing shift in emphasis towards science and technology in university education. On the other hand, much of the substantial rise in per student development cost occurred as a result of the establishment of new campuses and the founding of new universities.

4.8 Summary

At the time of independence in 1957, education at the primary level was already relatively well developed. However, facilities at the higher levels, particularly at the tertiary level, were extremely limited.

Rapid expansion of the education system took place after independence. By 1970, 88.2%, 52.2%, 20.1% and 3.1% of children in the relevant age groups were enrolled at the primary, lower secondary, upper secondary and post-secondary educational levels, respectively. Tertiary education, which started from a very low base, also expanded fairly rapidly. However, by 1970 only about 0.6% of the population in the relevant age group were enrolled in tertiary institutions.

The NEP provided further impetus to the expansion. In particular, tertiary education expanded very rapidly during the 1970s and early 1980s. Total enrolment in local public institutions increased from 14,291 in 1978 to 50,056 in 1980 and then to 86,321 in 1985. Enrolment at the degree level increased from 7,677 in 1970 to 21,944 in 1980 and 37,838 in 1985.

In the process of this expansion, the existing imbalances in terms of enrolment among the various ethnic and socio-economic groups were redressed significantly. *Bumiputera* share of total enrolment in tertiary institutions, especially in the field of science and technology, increased impressively. Likewise, educational opportunities for the lower SES groups also improved.

Despite the expansion in tertiary education, the present demand for places far exceeds the supply, resulting in a substantial number of students seeking tertiary education overseas. Over the next few years at least, the government is likely to respond to this demand by expanding the tertiary education sector further. However, there is increasing public concern in recent years about the possibility of the economy expanding fast enough to absorb the large output from tertiary institutions, especially the output from universities, into productive employment. As has been pointed out in Chapter 3, while graduate unemployment is as yet not a serious problem in Malaysia, there are increasing signs that the waiting period of graduates before their first job is getting longer. The experience of developing countries appears to indicate that it is easier to increase the output of educated people than it is to generate jobs for them.

As the education system expanded, so has the educational expenditure increased. Total expenditure in 1985 amounted to M$4,493 million. This comprised 6.2% of the country's GNP. University education absorbed about 15.6% of the total educational expenditure in 1985.

Chapter 5

Perceptions, Expectations and Experiences of Students and Graduates Regarding University Education

5.1 Introduction

This chapter deals with the perceptions, expectations and experiences of sixth form students, undergraduates and graduates regarding university education. Data relating to the educational aspiration of sixth form students and their intended fields of study at the university are discussed. The sixth formers' intended fields of study are compared with the fields of study chosen by the undergraduates and graduates. The changes in the field of study made by the undergraduates and the graduates and the reasons for such changes are also explored. The sources of finance for higher education and the role of career guidance are other aspects that are discussed in this chapter.

5.2 Students' Intention after Sixth Form Education

The sixth form students are the elite of the Malaysian secondary school system. Their entry into sixth form is based on their performance in the SPM/MCE examination held at the end of upper secondary education. Based on the result of the STPM/HSC examination held at the end of the two-year sixth form education, students are selected for university education.

The sixth form students were asked as to what they intended to do after sixth form education. Their responses are given in Table 5.1. The data in the table show that almost half (48.9%) of the total sample expressed the desire to work for a while before pursuing university education while 43.6% wanted to enter the university immediately. Some 4.8% wanted to seek employment and 2.7% desired a non-university tertiary education. It is interesting to note that almost half the number of students in the sample wanted to work for a while before pursuing university education. This could be due to the financial circumstances of the students. The finding appears to go against the commonly held belief that virtually all the students would enter university immediately after sixth form.

Nevertheless, it is clear that the vast majority of the sixth form students (92.5%) intended to pursue university education, either immediately or after a stint at work. This is hardly surprising since traditionally the objective of sixth form education is to prepare students for university education.

Table 5.1

Distribution of Students According to Their Intention After Sixth Form Education

Intention after sixth form	Number	Percentage
Pursue university education immediately	805	43.6
Work for a while before pursuing university education	903	48.9
Pursue college-level or non-university tertiary education	50	2.7
Seek employment	88	4.8
Total	1,846	100.0

5.3 Reasons for Pursuing University Education

Sixth form students were asked as to why they intended to pursue university education. Likewise, undergraduates and graduates were asked as to why they went to university. Their responses are displayed in Tables 5.2 and 5.3.[1] The desire to acquire a specific professional qualification was considered very important for pursuing university education by 77.2% of the sixth form students compared with 45.1% of the graduates (see Table 5.2). On the other hand, better employment opportunities were considered very important by 60.1% of the graduates compared with 62.1% of the sixth form students. As for the undergraduates, over one-third (36.1%) of the total sample stated better employment opportunities as their reason for undertaking university education (see Table 5.3). Another 35.9% of them indicated the desire for a specific professional qualification and 18.2% indicated the desire to widen their knowledge as reasons for doing so. Only a small minority of the undergraduates (3.9%) stated other reasons.

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[1] Sixth form students and graduates were asked to rank each of the four reasons either very important, important or not important. On the other hand, undergraduates were asked to select only one of the reasons given.

The pattern of responses indicate that the three groups either intended to pursue or pursued university education mainly to acquire professional qualifications or to enhance their employment prospects. As regards the former, it is probable that the respondents wanted a professional qualification because it would increase their employment opportunities. If this line of thinking is acceptable, the importance of better employment opportunities as a reason for university education is doubly emphasized.

Table 5.2

Percentage Distribution of Sixth Form Students and Graduates Regarding the Reasons for Pursuing University Education

Reason	Sixth form (N=1,857)			Graduates (N=1,670)			
	VI	I	NI	VI	I	NI	NR
Want a specific professional qualification	77.2	20.7	2.1	45.1	38.7	9.6	6.6
Better employment opportunities	62.1	33.3	4.6	60.1	32.4	3.3	4.2
Desire study for its own sake	40.1	52.0	7.9	22.9	46.6	20.2	10.3
The country needs my talents	51.9	41.5	6.6	23.9	47.4	18.3	10.4

Key : VI = Very important.
NI = Not important.
I = Important.
NR = Non-response.

Table 5.3

Percentage Distribution of Undergraduates Regarding the Reasons for Pursuing University Education

Reason	Undergraduates (N=2,432)
Want a specific professional qualification	35.9
Better employment opportunities	36.1
To widen one's knowledge	18.2
Other reasons (parental pressure, given the opportunity, given scholarship, etc.)	3.9
Non-response	5.9

5.4 Choice of Field of Study

The range of desired and actual courses of study at the university was wide. As regards the sixth form students, some of the popular courses were social science (including education), engineering and technology, arts, economics and administration, computer science, medicine, law, mathematics and statistics and accountancy.

Further analysis of the data regarding sixth form students by sex, ethnic group, area of specialization and SES shows some interesting patterns. It is found that social science (including education) was more popular among the female students than among the male students. However, engineering and technology courses were more popular among the male students than among the female students.

The pattern in the choice of fields of study also differed according to the ethnic origin of the students. A total of 79.3% of the Bumiputera students chose arts, economics and administration and social science (including education) compared with 42.2% of the Chinese and 51.6% of the Indian students. On the other hand, a larger proportion of the Chinese and Indian students than the Bumiputera students chose technology and architecture as prospective fields of study at the university. A positive relationship between SES and certain fields of study can also be noted. As the income level of the students' fathers increases, the percentage of students intending to take up law, medicine and architecture also increases.

As expected, the vast majority of the sixth form students who were in the arts stream intended to study arts, economics and administration and social science (including education) at the university. Students in the science stream wanted to take up science-related courses such as medicine and engineering. However, about one quarter (23.4%) of the science students also indicated that they intended to take up arts, economics and administration and social science (including education).

As regards the place of study, 89.3% of the sixth form students intended to pursue their university education in local institutions and only 10.7% indicated a desire to study overseas. In terms of ethnic origin, 14.3% of the Chinese students and 10.5% of the Indian students compared with only 8.4% of the Bumiputera students wanted to pursue university education overseas. Analysis by sex indicates that a higher proportion of the male students (15.1%) than female students (6.8%) wanted to go overseas for university education.

As for the undergraduates who were already following courses of study in the various universities, 63 areas of specialization were identified. These specializations are grouped under broad fields of study as shown in Table 5.4. As can be seen in the table, the undergraduates were distributed among arts (20.1%), economics and administration (16.6%), science (11.7%), engineering and technology (11.1%), social science (including education)(9.3%), accountancy (7.5%), mathematics and statistics (7%), agriculture (6.7%), medicine (4.6%), computer science (3.1), journalism (1.7%) and law (0.7%).

Table 5.4

Distribution of Students and Graduates by Field of Specialization

Field of specialization	Sixth form students		Under-graduates		Graduates	
	N	%	N	%	N	%
Arts	164	9.2	469	20.1	147	9.3
Economics and administration[a]	475	26.7	387	16.6	551	34.9
Social science (including education)	401	22.6	217	9.3	124	7.9
Sciences	79	4.4	273	11.7	118	7.5
Agricultural sciences	22	1.2	157	6.7	47	3.0
Accountancy	66	3.7	175	7.5	66	4.2
Law	82	4.6	17	0.7	25	1.6
Medicine	85	4.8	108	4.6	11	0.7
Engineering and technology	171	9.6	259	11.1	292	18.5
Architecture	25	1.4	-	-	34	2.2
Mathematics and statistics	79	4.4	164	7.0	48	3.0
Computer science	87	4.9	72	3.1	48	3.0
Others	42	2.4	40	1.7	68	4.3
Total	1,778	99.9	2,338	100.0	1,579	100.1

Notes : Percentages do not add to 100 due to rounding off.

a - Includes business management and public administration.

As for the graduates, the most popular areas of specialization were economics and administration, followed by engineering and technology. However, had the graduates been given a free choice, more would have preferred to study in areas such as dentistry, law and architecture.

In exploring the reasons for the choice of field of study, the majority (68.0%) of the undergraduates stated that interest was the main reason. Other reasons were : 'subject was given' (12.5%), 'good job prospects' (3.7%) and 'had good SPM/STPM results in the field of study' (3.5%). This pattern of response is quite similar to that of the sixth form students.

The above analysis of the distribution of respondents by field of study shows that a large proportion of each of the three groups were and would be in arts, economics and administration and in the area of social science (including education). For example, 58.5% of the sixth form students wanted to take up these fields. These were also fields of study of 46.0% of the undergraduates and 52.1% of the past graduates.

5.5 Change of Field of Study and Reasons for the Change

The majority of the undergraduates (79.4%) were satisfied with their fields of specialization and did not want a change. However, about 18% of them wanted a change if they had an opportunity to do so. A total of 56.8% of those who desired a change wanted to enter fields such as law, economics and commerce and applied science such as computer science and engineering. The rest wanted to study arts, medicine and science.

As for the graduate sample, only 13.8% had actually changed their field of study. Over the years, there had been a gradual increase in the proportion of graduates who had changed their field of study. For example, while only 10.4% of the pre-1969 graduates had changed their field, some 16.0% of the post-1980 graduates had done so. The largest proportion of those who had changed their field of study were from the arts and humanities (27.3%) and pure sciences (18.4%). Those who were offered professional courses such as medicine and law did not desire a change.

The responses of the undergraduates and graduates indicate that increasingly larger proportions of the students had not been offered their first choice of study owing to the increasing competitiveness for places in the universities. Secondly, the actual or desired change was in the direction of professional courses. Thirdly, once a field of study was offered by the university it was difficult to change to another discipline.

The majority (81.6%) of the undergraduates who desired a change in the field of study gave interest as their reason. Another 5.8% stated that the field was given, implying that the field was not of their choice. A further 5.7% wanted a change because the new field would provide them with better job prospects. As regards the graduates, two main reasons were given by the majority (75.1%) for the change. They were better career opportunities in the new field (42.6%) and the field offered was not suitable (32.5%).

It is clear from the above discussion that the reasons for the desired change of the undergraduates and the actual change of the graduates in their field of study differed. The majority of the undergraduates cited interest as their main reason whereas the graduates stated better career opportunities as their main reason.

5.6 Expected and Actual Sources of Finance for University Education

Table 5.5 shows the expected sources of finance of the sixth form students and the actual sources of finance of the undergraduates and graduates for university education.

Table 5.5

Distribution of Respondents by Financial Source for University Education

Financial source	Sixth form students N	Sixth form students %	Undergraduates N	Undergraduates %	Graduates N	Graduates %
Government and quasi-government scholarship/bursary	1,361	76.5	1,347	55.4	663	39.7
Non-government scholarship/bursary	152	8.5	95	3.9	190	11.4
Family	197	11.1	457	18.8	504	30.2
Own efforts (personal savings)	43	2.4	58	2.4	66	3.9
Loan	26	1.5	397	16.3	117	7.0
Non-response	-	-	78	3.2	130	7.8
Total	1,779	100.0	2,432	100.0	1,670	100.0

Over three-fourths (76.5%) of the sixth form sample expected to obtain scholarships or bursaries provided by the government or quasi-government agencies to finance their university education. The next major source of finance for this group was the family (11.1%), followed by scholarships provided by non-government agencies (8.5%). Personal savings and loans as other sources of finance were expected to play a very small role.

The expected sources of finance for university education among sixth form students vary by sex, ethnic group and father's income. A slightly higher proportion of the female students (79.6%) than male students (73.1%) expected scholarships and bursaries from government and quasi-government agencies to finance their university education. On the other hand, a higher proportion of the male students (11.2%) than female students (6.2%) expected scholarships and bursaries from non-government agencies as financial sources.

As regards ethnic group, a very high proportion of the Bumiputera students (92.9%) compared with the Chinese (55.6%) and Indian (54.6%) students expected to be financed through scholarships and bursaries provided by government and quasi-government agencies. The percentage of Bumiputera students who expected financial aid from other sources was substantially lower than the non-Bumiputera students. Variations in expectations for financial aid by father's income can also be observed. As the income level of the students' fathers increases, the proportion of students expecting financial aid from government and quasi-government agencies decreases and the proportion expecting family resources to finance their university education increases.

There are considerable differences between the pattern of expected sources of finance of sixth formers and the actual sources of finance of the undergraduates. Although over three-fourths (76.5%) of the sixth form students expected to obtain scholarships and bursaries from government and quasi-government agencies, only over half (55.4%) of the undergraduates were, in fact, under such scholarships or bursaries. Family resources and loans from various sources have been under-played by the sixth form group. In fact, these were important sources of finance for the undergraduates.

The pattern of finance of the the graduate sample also differed from that of the sixth form and undergraduate samples. While three-quarters of the sixth form students expected and over one-half of the undergraduates actually obtained financial aid from government and quasi-government agencies, only 39.7% of the graduates actually obtained such aid.

Further analysis of data relating to the graduates shows that more women than men were beneficiaries of government and quasi-government scholarships and bursaries for university education. A large majority of the graduates who had government and quasi-government scholarships and bursaries were from low SES homes. Graduates from the less developed states were also more likely to obtain such financial aid than those from the more developed states. Furthermore, a larger proportion of the Bumiputera than non-Bumiputera respondents were awarded such scholarships and bursaries for their university education. On the other hand, a higher proportion of the non-Bumiputera than Bumiputera respondents financed their university education through family resources.

The data in Table 5.5 suggest that the financing of university education was increasingly borne by the government through the provision of scholarships and bursaries. Those who were not awarded government scholarships or bursaries sought financial aid from the private sector or depended on family resources. Only a small minority financed their university education through their own savings.

5.7 The Role of Career Guidance

One of the important features of a career guidance programme is the information it provides regarding the job market. Such information can help to guide students into fields of study needed for economic development as well as to reduce any mismatch between manpower demand and supply. The choice of an appropriate field of study by students according to the demands of the labour market and their personal capabilities and interest is important for the individuals concerned and for the country as a whole. Therefore, the necessity of having adequate information and guidance regarding educational and occupational careers cannot be overemphasized.

Data from our surveys indicate that the majority of the sixth form students felt that some form of guidance and counselling would be important for their choice of educational and occupational careers. Furthermore, an overwhelming majority (89.9%) of them stated that some form of guidance and counselling regarding courses of study and job opportunities would be useful before they enter university. In fact, 58.4% of them did receive some form of guidance regarding careers before they entered sixth form. The sources of career information received by them are shown in Table 5.6.

Table 5.6

Distribution of Sixth Form Students by Source of Career Information

Source of career information	Number	Percentage
Teachers of the school	562	51.7
Parents or relatives	288	26.5
Guidance and counselling or career masters	61	5.6
Friends or other students	103	9.5
General information from books, newspapers, etc.	66	6.1
Other sources	7	0.6
Total	1,087	100.0

A total of 51.7% of those who did receive career information obtained it from their school teachers. Another 26.5% of them received their information from their parents or relatives. Other important sources of information were friends or other students (9.5%), books and newspapers (6.1%) and guidance and counselling or career masters (5.6%). It is surprising that only a small minority received their career information from the guidance and counselling or career masters. The plausible explanation is that professional guidance and counselling services were not widely available in schools.

There are variations in the percentage distribution of the subgroups according to the sources of career information. A slightly higher proportion of the female students than the male students received their career information from their parents or relatives. A larger proportion of the male students than the female students obtained their information from friends or other students. Analysis by ethnic group shows that a higher percentage of the Bumiputera students than the Chinese or Indian students received their career information from their teachers. Furthermore, a smaller proportion of the Bumiputera than non-Bumiputera students obtained such information from their parents or relatives.

As regards the distribution of the respondents by SES, it was found that students from high SES backgrounds depended more on their parents and relatives for their career information. Students from low SES backgrounds were more likely to receive their career guidance from their teachers.

The undergraduates were posed a slightly different question. They were asked to indicate the relative importance of seven sources of information on job opportunities, and their pattern of responses are presented in Table 5.7. Based on the 'important' and 'very important' ratings of the respondents, the five most predominant sources of information about job opportunities were: advertisements (90.8%), friends (80.0%), experience in the job (63.1%), university lecturers (60.2%) and career officers in the universities (58%). Teachers in schools and parents and family were considered to be unimportant as information sources by 49.8% and 48.1% of the respondents, respectively.

Table 5.7

Perceptions of Undergraduates Regarding the Degree of Importance of Sources of Information on Job Opportunities

Source of information	Degree of importance							
	Very important		Important		Not important		Non-response	
	N	%	N	%	N	%	N	%
Parents and family	133	5.5	830	34.1	1,169	48.1	300	12.3
Friends	391	16.1	1,554	63.9	282	11.6	205	8.4
Advertisements	1,372	56.4	836	34.4	104	4.3	120	4.9
Experience in the job	500	20.6	1,033	42.5	599	24.6	300	12.3
Teachers of former school	121	5.0	794	32.6	1,211	49.8	306	12.6
Careers officers in university	444	18.3	979	40.3	744	30.6	265	10.9
University lecturers	367	15.1	1,096	45.1	702	28.8	267	11.0

5.8 Perceptions Regarding University Education

The undergraduates were asked to respond to nine statements regarding the relevance of university study to life and work. Among the statements, three were concerned with employment, three about life in general and three about life in the university. The responses to these statements are summarized in Table 5.8.

In terms of employment (the first three items in Table 5.8), 79.4% of respondents agreed that the courses they had taken would assist them in their future employment, 71.6% agreed that university study would be relevant to their prospective field of occupation, and 59.1% indicated that university study was a stepping-stone to obtaining good employment.[2]

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[2] The percentages in this and the next two paragraphs refer to those who 'fully aged' and 'agreed' with each of the statements.

Table 5.8

Relevance of University Study to Life and Work

Relevance of university education	Degree of agreement									
	Agree fully		Agree		Do not agree		Do not know		Non-response	
	N	%	N	%	N	%	N	%	N	%
Courses you have taken will assist you in your future employment	459	18.9	1,471	60.5	309	12.7	154	6.3	39	1.6
University study is relevant to the field of occupation you will choose	355	14.6	1,387	57.0	448	18.4	206	8.5	35	1.4
University study is a stepping-stone to obtaining good employment	270	11.1	1,168	48.0	857	35.2	39	3.8	44	1.8
University study helps to enrich your present way of life	413	17.0	1,560	64.1	313	12.9	102	4.2	44	1.8
University study prepares you for a good life in the future	301	12.0	1,288	53.0	562	23.1	228	9.4	53	2.2
University provides various opportunities for widening your interest	240	9.9	1,371	56.4	700	28.8	88	3.6	33	1.4
University study is so intensive that it does not permit you to be involved in activities you enjoy	450	18.5	906	37.3	973	40.0	71	2.9	32	1.3
University study places great emphasis on passing examinations	1,086	44.7	1,117	45.9	170	7.0	27	1.1	32	1.3
You occasionally regret entering university	60	2.5	422	17.4	1,773	72.9	129	5.3	48	2.0

With respect to life (the next three items in Table 5.8), most of the respondents agreed that university study helped to enrich their present way of life (81.1%), prepared them for a good life in the future (65.0%) and provided various opportunities for widening their interest (66.3%).

Concerning university life (the last three items in Table 5.8), 55.8% were of the opinion that university life was so intensive that they were unable to participate in activities they enjoyed. The majority of the respondents (90.6%) agreed that university study placed great emphasis on passing examinations. Furthermore, 19.9% of the respondents indicated that they occasionally regretted going to the university.

5.9 Summary and Conclusion

The focus of this chapter is on the perceptions, expectations and experiences of sixth form students, undergraduates and graduates regarding university education. A summary of the discussion is given below.

In exploring the intention of the students after sixth form education, it was found that 92.5% of them aspired for a university education. About 48.9% of them expressed a desire to work before pursuing university education. This is an encouraging trend because a stint in the world of work would make the students more mature and more likely to derive greater benefits from university education. Furthermore, through their savings they might be able to finance part of their university education and thereby reduce their financial dependence on the state, their family and other organizations.

Two main reasons were emphasized by all the three groups for pursuing university education. They were to obtain a specific professional qualification and to enhance their employment opportunities in the labour market. The other reasons, such as study for its own sake and the country needs their talents, were not as important.

The study also found that the majority of the sixth formers, undergraduates and graduates preferred arts-based courses. Economics and administration and social science (including education) were particularly popular choices.

Several factors influenced the students' choice of a particular course of study in the university. Interest was the main factor influencing their choice although other reasons such as opportunity for a good job, expectation of better income and opportunity to work in the government sector were also cited.

In terms of sources of finance for university education, there appeared to be an increasing dependence on the state. The role of the family and the private sector in financing the students' university education had been correspondingly reduced.

The data pertaining to career guidance show that guidance and counselling services in educational institutions was grossly inadequate. The majority of the sixth formers who did receive some form of career information obtained it from their teachers and parents and only a small minority received such guidance from their guidance and counselling or career masters.

Finally, the findings appear to indicate that the undergraduates believed that a university education would enable them to get a good job, enrich their lives and widen their interest. However, a large majority of the undergraduates also indicated that university education was too examination-oriented. Some even had feelings of regret for going to the university.

Chapter 6

The Transition from University Education to Work

6.1 Introduction

It is normally expected that students who are enrolled in tertiary institutions will seek employment on completion of their studies. At some point or other, these students will identify their careers. What considerations influence their choice of careers? To what extent does success in their university education affect their choice of careers? What methods do students and graduates use to acquire career information? Clearly, choosing one's career is only the first step in the transition from education to the world of work. The second step is to acquire labour market information. What are the preferred methods? What are the principal sources of such information? Beyond the job search process lies actual experiences in obtaining employment. How long does it take? What are the criteria by which one is selected for employment?

To contribute to our understanding of the transition from education to the world of work, the present chapter discusses on the following: career choice and success in university education, methods of acquiring labour market information, methods of obtaining first employment, the waiting period, first job status, and recruitment criteria used by the employers.

6.2 Career Choice and Success in University Education

The importance of university education can be seen in the emphasis which students place on it as a factor affecting their choice of career. Data obtained from the study seem to indicate that the respondents perceived their success in university education to be crucial to their choice of careers. Among the sixth form students, 72.4% indicated that their choice of a career would be very much dependent on success in their university education (see Table 6.1). A further 24.4% indicated that their career choice would depend to some extent on success in university education. Posed with the same question, 46.2% of the graduates indicated that their choice of career was very much dependent on their success in their education. A further 44.6% indicated that this was so to some extent.

Looking at it in another way, only 2.3% of sixth form students indicated that their career choice would not depend on their success in university education. For the graduates, 7.0% indicated likewise.

Table 6.1

Distribution of Responses According to the Extent to Which Choice of Career Depended on Success in University Education (Percentage)

Respondent	Degree of dependence				
	Very much	To some extent	Not at all	Do not know/ non-response	Total (N)
Sixth form students	72.4	24.4	2.3	0.9	1,865
Graduates	46.2	44.6	7.0	2.2	1,670

There seems to be a significant difference in perception between the sixth form students and the graduates. The reason could be that sixth form students had a more idealistic picture of the relationship between education and employment. Graduates, having been in the labour market for some time, tended to be more realistic. They knew better that the relationship between education and work was not always perfect, i.e., there was more to career choice than success in university education.

Table 6.2 shows the distribution of responses on the degree of dependence of career choice on educational success according to three broad fields of study. The data pertains only to the sixth form students and the graduates. Over 70% of the sixth form students in the arts-based and science-based courses indicated that success in their university education would strongly influence their career choice. A marginally larger proportion of students in the science-based courses (3.4%) than in the arts-based courses (1.6%) indicated that their choice of career would not depend on their success in university education.

The responses among the graduates show a more varied picture. One-half of the graduates from the arts-based courses, compared with 57.8% of the graduates from the science-based courses and 69.0% of the graduates from the professional courses, indicated that the choice of a career depended very much on success in university education. From the other end of the spectrum, only 1.0% of the graduates from the professional fields indicated that the choice of a career did not depend on success in university education. The corresponding percentage for the graduates from the arts-based courses is 5.5%, and for the graduates from the science-based courses is 5.0%. It would appear that a larger proportion of the graduates from the professional courses than graduates from the non-professional courses perceived that career choice depended very much on success in university education.

Table 6.3 shows the distribution of responses of the graduates according to their alma mater. Larger proportions of the graduates from Universiti Teknologi Malaysia, Universiti Pertanian Malaysia and overseas universities than from the other local universities indicated that their career choice depended very much on their success in university education. It should be noted that significantly larger proportions of the graduates from Universiti Teknologi Malaysia and Universiti Pertanian Malaysia than from the other local universities were from the professional and vocational courses. It is also possible that a large proportion of the overseas graduates were also from such courses.

Table 6.2

The Extent to Which Choice of a Career is Dependent On Success in University Education: Distribution of Responses by Field of Study

Field of study	Degree of dependence											
	Very much				To some extent				Not at all			
	Sixth form students		Graduates		Sixth form students		Graduates		Sixth form students		Graduates	
	N	%	N	%	N	%	N	%	N	%	N	%
Arts-based courses[a]	845	73.2	410	50.2	290	25.1	361	44.2	19	1.6	45	5.5
Science-based courses[b]	499	72.7	301	57.8	164	23.9	194	37.2	23	3.4	26	5.0
Professional courses[c]	n.a.	n.a.	136	69.0	n.a.	n.a.	59	29.9	n.a.	n.a.	2	1.0

Notes: a - Arts-based courses - History, geography, languages, economics, administration, education, sociology, anthropology, etc.

b - Science-based courses - Physics, chemistry, biology, agricultural science, computer science, mathematics, statistics, environmental studies, food technology, etc.

c - Professional courses - Engineering, medicine, law, architecture, dentistry, etc.

n.a. - Not applicable.

Percentages may not add to 100 due to rounding off.

Table 6.3

The Extent to Which Choice of a Career is Dependent on Success in University Education: Distribution of Graduate Responses by Institution

Institution	Degree of dependence					
	Very much		To some extent		Not at all	
	N	%	N	%	N	%
Universiti Malaya	351	51.0	300	43.6	37	5.4
Universiti Kebangsaan Malaysia	68	48.9	64	46.0	7	5.0
Universiti Sains Malaysia	50	46.7	50	46.7	7	6.5
Universiti Teknologi Malaysia	21	70.0	9	30.0	0	0.0
Universiti Pertanian Malaysia	34	58.6	21	36.2	3	5.2
Institut Teknologi MARA[a]	20	58.8	14	41.2	0	0.0
Overseas universities	318	61.5	178	34.4	21	4.1

Notes: a - This refers to a small number of graduates produced by Institut Teknologi MARA.

Percentages may not add add to 100 due to rounding off.

Table 6.4 shows the distribution of responses among the sixth form students and graduates by sex. It can be seen that the proportions by sex between the two groups are rather similar. In other words, there appears to be minimal difference between males and females in their perception of the relationship between career choice and success in university education.

The general conclusion is that students and graduates perceived that education played a very important part in the choice of a career. A larger proportion of the graduates from the professional courses than that from the non-professional courses perceived this to be so. There is no significant difference in the perceptions between males and females regarding this relationship between career choice and educational success.

6.3 Methods of Obtaining Labour Market Information.

One of the first steps towards employment participation is the acquisition of labour market information such as job prospects,

Table 6.4

The Extent to Which Choice of a Career is Dependent On Success in University Education: Distribution of Responses by Sex

Sex	Degree of dependence											
	Very much				To some extent				Not at all			
	Sixth form students		Graduates		Sixth form students		Graduates		Sixth form students		Graduates	
	N	%	N	%	N	%	N	%	N	%	N	%
Male	637	72.4	604	54.7	214	24.3	448	40.6	29	3.3	52	4.7
Female	710	73.8	201	56.3	239	24.8	138	38.7	13	1.4	18	5.0

conditions of work and promotion prospects. The respondents were asked to indicate their preferences for the four methods on a four-point scale in which '1' meant the most preferred and '4' the least preferred. In Table 6.5, the ratings have been regrouped under two broad categories. Ratings of '1' and '2' constitute a high rating while '3' and '4' constitute a low rating.

Among the sixth form students, practical job experience during the course of study was the most preferred method. Some 87.0% of the students regarded it as a highly preferred method. Discussing with workers in the related fields was the second most preferred method. Reading career publications and personally getting information from potential employers were not very popular methods among the sixth form students.

Table 6.5

Distribution of Sixth Form Students and Graduates According to Their Preference for the Methods of Obtaining Labour Market Information (Percentage)

Method of Obtaining Labour Market Information	Rating[a]	Sixth Form students (N = 1865)	Graduates (N = 1670)
Practical job experience during course of study	High	87.0	73.1
	Low	13.0	22.3
	NR	-	4.6
Personally getting information from prospective employers	High	24.9	71.3
	Low	67.1	23.3
	NR	-	5.4
Reading career publications	High	28.1	60.5
	Low	61.8	34.0
	NR	-	5.5
Discussing with worker from related fields	High	54.0	41.8
	Low	46.0	52.5
	NR	-	5.7

Note: a - The respondents were asked to indicate their preferences for the four methods on a four-point scale in which '1' meant the most preferred and '4' meant the least preferred. 'High' constitutes ratings of '1' and '2'. 'Low' constitutes ratings of '3' and '4'. 'NR' means non-response.

Percentages may not add to 100 due to rounding off.

The graduates also ranked practical job experience during the course of study as the most preferred method of acquiring labour market information or insights into the prospective job. A total of 73.1% of them gave this method a high rating. This is followed closely by personally getting information from potential employers and reading career publications. Discussing with workers in related fields was the least preferred method. Only 41.8% of the graduates gave it a high rating.

It is interesting to note that 61.8% of the sixth form students and 34.0% of the graduates did not view reading career publications as a highly important method of obtaining labour market information. There are several plausible reasons for this. For instance, it is possible that there were insufficient career publications. Secondly, it is also possible that the publications available were not relevant to the Malaysian situation or not sufficiently informative. Thirdly, students bonded by scholarships and bursaries had limited right of choice of careers, at least at the initial stage of their working lives, and this in itself may reduce the incentive to read career publications.

Table 6.6 presents a composite picture of the responses of sixth form students and graduates on the methods of acquiring labour market information by sex, ethnic group, field of specialization, SES and institution.

Among both the sixth form students and the graduates, differences between males and females appear to be minimal. *Bumiputera* sixth form students and graduates tended to view practical job experience during the course of study and reading career publications as relatively more important methods of acquiring labour market information compared with their non-*Bumiputera* counterparts.

The field of study seems to have some bearing on the relative importance which the graduates placed on the various methods of acquiring labour market information. Graduates in the professional disciplines, such as architecture and medicine, tended to rate

Table 6.6

Percentage Distribution of Sixth Form Students and Graduates According to Their Preference for the Methods of Obtaining Labour Market Information by Sex, Ethnic Group, Field of Study, SES and Institution

Sub-group	Method of obtaining labour market information															
	Practical job experience during course of study				Personally getting information from employers				Reading career publications				Discussion with workers in related fields			
	Sixth form students		Graduates		Sixth form students		Graduates		Sixth form students		Graduates		Sixth form students		Graduates	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Sex																
Male	87.1	12.9	76.1	23.9	34.2	65.8	63.3	36.6	35.5	64.5	42.5	52.4	56.2	43.8	75.3	24.7
Female	96.9	13.1	77.7	22.3	31.7	68.3	65.6	34.4	40.5	59.5	38.8	61.2	51.7	48.3	77.1	23.0
Ethnic Group																
Bumiputera	88.4	11.6	77.2	22.8	30.1	69.9	64.2	35.8	50.2	49.8	48.2	51.8	46.2	53.8	74.1	25.9
Chinese	85.7	14.3	75.9	24.1	36.0	64.0	62.4	37.6	23.4	76.6	39.1	60.9	63.5	36.5	75.8	24.2
Indian	80.4	19.6	75.5	24.5	35.0	65.0	64.4	35.6	27.8	72.2	43.8	56.2	60.8	39.2	81.3	18.8
Field of Study																
Arts-based courses[a]	-	-	77.5	22.4	-	-	65.0	35.0	-	-	46.6	53.4	-	-	76.0	24.0
Science-based courses[b]	-	-	77.7	22.2	-	-	63.6	36.9	-	-	43.4	56.5	-	-	76.4	23.6
Professional courses[c]	-	-	84.2	15.9	-	-	63.7	36.3	-	-	47.0	53.0	-	-	76.0	24.0
SES																
High	86.5	13.5	74.1	26.0	37.0	63.0	63.8	36.3	27.0	73.0	42.7	57.2	58.1	41.9	77.5	22.5
Middle	87.3	12.7	66.5	15.4	31.4	68.6	65.7	34.3	36.0	64.0	43.9	56.0	56.1	43.9	43.2	26.8
Low	87.0	13.0	78.0	22.0	31.4	68.6	60.0	39.3	45.7	54.3	43.2	56.7	49.8	50.2	79.7	20.3
Institution																
Universiti Malaya	-	-	72.7	27.3	-	-	63.9	36.1	-	-	41.4	58.6	-	-	73.4	26.6
Universiti Kebangsaan Malaysia	-	-	73.9	26.1	-	-	63.7	36.3	-	-	52.3	47.7	-	-	76.3	23.7
Universiti Sains Malaysia	-	-	83.4	16.6	-	-	64.5	35.5	-	-	44.0	56.0	-	-	77.6	22.5
Universiti Teknologi Malaysia	-	-	83.3	16.7	-	-	58.6	41.3	-	-	50.0	50.0	-	-	83.4	16.7
Universiti Pertanian Malaysia	-	-	81.0	19.0	-	-	62.0	38.0	-	-	37.9	52.1	-	-	81.1	18.9
Institut Teknologi MARA[d]	-	-	94.1	5.9	-	-	62.9	37.1	-	-	51.5	48.6	-	-	82.8	17.2
Overseas universities	-	-	76.6	23.4	-	-	63.6	36.4	-	-	46.0	54.0	-	-	76.1	23.9

Notes: The respondents were asked to indicate their preferences for the four methods on a four-point scale in which '1' meant the most preferred and '4' meant the least preferred. 'High' in the table above constitutes ratings of '1' and '2' and 'Low' constitutes ratings of '3' and '4'.

a, b and c - See notes to Table 6.2
d - This refers to a small number of graduates produced by Institut Teknologi MARA.

Percentages may not add to 100 due to rounding off.

practical job experience more highly than the graduates in the other disciplines.

Among the sixth form students, those from the high SES group tended to rate personally getting information from potential employers and discussing with workers in related fields more highly than those from the low SES group. On the other hand, those from the low and middle SES groups tended to rate reading career publications more highly. Where practical job experience as a method of obtaining labour market information is concerned, there are minimal differences across the SES groups. Among the graduates, definite differences are less discernable. However, it appears that those from the low SES group tended to rate practical job experience more highly than those from higher SES groups.

The preference for various methods of acquiring labour market information differs among graduates from the various universities. There appears to be a greater tendency for graduates from the technically and vocationally oriented universities than graduates from the other universities to prefer practical job experience and discussion with workers in related fields as methods of acquiring such information. There are, however, no significant differences in preferences between local and overseas graduates. Almost the same proportion of each category of graduates rated each of the four methods in the same way.

6.4 Methods of Obtaining First Employment

This section considers an aspect of the actual labour market experiences of graduates. Table 6.7 presents a summary of the methods used by the graduates in securing their first employment.

Newspaper advertisements appear to be the principal method of securing a first job. A total of 41.0% of the graduates found their first job through this method. Next on the list comes scholarship and bursary bonds (28.8%), followed by personal contacts (12.6%). All other methods appear to be of minor importance.

Table 6.7

Distribution of Graduates According to the Methods of Obtaining First Employment in Private and Public Sectors

Method of obtaining first employment	Sector					
	Public		Private		Total	
	N	%	N	%	N	%
Newspaper advertisements	308	36.2	377	46.0	685	41.0
Ministry of Labour	6	0.7	9	1.1	15	0.9
Bonded to employer by scholarship/bursary/ grant	359	42.2	122	14.9	481	28.8
Through institution from which graduated	44	5.2	83	10.1	127	7.6
Personal contacts (with employer, etc.)	70	8.2	141	17.2	211	12.6
Other methods	30	3.5	44	5.4	74	4.4
Non-response	33	3.9	44	5.4	77	4.7

Note : Percentages may not add to 100 due to rounding off.

A closer look at the data shows that newspaper advertisements formed the principal method of securing the first job among graduates in the private sector. In contrast, among the graduates in the public sector, the principal method was scholarship and bursary bonds. For graduates in the private sector, the next major method was personal contacts, followed by scholarship and bursary bonds, and their alma mater. For graduates in public sector employment, the next major method was newspaper advertisements. Personal contacts was a poor third. It is pertinent to note that the Ministry of Labour and Manpower played a minor role.

Table 6.8 shows the distribution of respondents according to the various methods of obtaining their first employment by sex, ethnic group, field of study, SES and institution. There is no significant difference between male and female graduates in the modes of obtaining their first employment. The largest number of

Table 6.8

Distribution of Graduates According to the Methods of Obtaining First Employment by Sex, Ethnic Group, Field of Study, SES and Institution

Sub-group	Method of obtaining first employment									
	Through institution from which graduated		Ministry of Labour		Newspaper Advertisements		Personal contact with employer		Bonded by Scholarship	
	N	%	N	%	N	%	N	%	N	%
Sex										
Male	86	8.4	11	1.1	460	45.0	149	14.6	316	30.9
Female	26	7.9	3	0.9	147	44.4	39	11.8	116	35.0
Ethnic Group										
Bumiputera	78	9.4	5	0.6	295	35.4	86	10.3	369	44.3
Chinese	40	7.4	9	1.7	315	57.9	97	17.8	83	15.2
Indian	9	6.6	1	0.7	72	52.6	27	19.7	28	20.4
Field of study										
Arts-based courses[a]	66	8.6	10	1.3	364	47.6	89	11.6	236	30.8
Science-based courses[b]	44	9.1	5	1.0	219	45.2	78	16.1	139	28.8
Professional courses[c]	9	5.0	0	0.0	62	34.4	31	17.2	78	43.3
SES										
High	16	10.6	3	2.0	79	52.3	25	16.6	28	18.5
Middle	59	9.4	7	1.1	271	43.3	86	13.7	203	32.4
Low	22	6.7	3	0.9	134	41.1	39	12.0	128	39.3
Institution										
Universiti Malaya	54	8.4	9	1.4	286	44.4	67	10.4	228	35.4
Universiti Kebangsaan Malaysia	6	4.4	1	0.7	80	58.8	8	5.9	41	30.2
Universiti Sains Malaysia	15	15.2	0	0.0	49	49.5	14	14.1	21	21.2
Universiti Teknologi Malaysia	1	3.4	0	0.0	3	10.3	3	10.3	22	76.0
Universiti Pertanian Malaysia	23	40.4	0	0.0	14	24.6	0	0.0	20	35.0
Institut Teknologi MARA[d]	7	20.0	0	0.0	10	28.6	7	20.0	11	31.4
Overseas universities	19	4.8	4	1.0	220	55.6	103	26.0	50	12.6

Notes: a, b and c - See notes to Table 6.2.
d - This refers to a small number of graduates produced by Institut Teknologi MARA.

Percentages may not add to 100 due to rounding off.

respondents, about 45% of both males and females, obtained their first job through newspaper advertisements, while the second largest number, about 30 - 35%, were bonded by scholarships and other agreements to serve their respective sponsors. A slightly larger proportion of female (35.0%) than male (30.9%) graduates were bonded by scholarships and other awards. Many of them were bonded by teaching bursaries designed to meet the demand for teachers in secondary schools.

Ethnic differences are quite significant. Such differences could be due to the availability and accessibility of public and private sector scholarships and bursaries to certain ethnic groups. The Bumiputera graduates, particularly the Malays in Peninsular Malaysia, accounted for 76.8% of the total number of recipients of scholarships and other awards. The Chinese graduates accounted for a further 17.3% and the Indian graduates 5.8%. Contractual agreements to serve upon completion of one's course of study may, therefore, be an important mode of securing a first job among the Bumiputera graduates. In fact, the largest proportion (44.3%) of the Bumiputera graduates found their first job through this means. Newspaper advertisements appear to be the second most common mode for the Bumiputera graduates (35.4%). In contrast, more than one-half of the Chinese (57.9%) and Indian (52.6%) graduates relied on newspaper advertisements. Only 15.2% of the Chinese and 20.4% of the Indian graduates found their first job through contractual agreements in the form of scholarships and other awards. However, both these groups also relied on personal contacts with employers to a larger extent than the Bumiputera graduates. A total of 17.8% of the Chinese graduates and 19.7% of the Indian graduates used this means, compared with only 10.3% of the Bumiputera graduates.

Some differences appear among the graduates in the different fields of study. A very high proportion of the graduates in the professional fields, such as law and architecture, secured their first job through scholarship and bursary bonds. This could be a reflection of the desire on the part of the public and private sectors to fulfil their manpower requirements for such skills. A more detailed analysis also reveals that graduates in some professional fields, such as medicine, tended to rely on personal contacts with employers or fellow professionals in seeking their first job. On the other hand, graduates in the non-professional fields tended to rely more on newspaper advertisements. On the whole, a smaller proportion of the graduates in the non-professional field were recipients of scholarships and other awards.

A total of 76.0% of Universiti Teknologi Malaysia graduates obtained their first job through scholarship and bursary bonds. Although the sample size is rather small, it is interesting to note that Universiti Pertanian Malaysia helped some 40.4% of its graduates to find their first job. Large proportions of the graduates of Universiti Malaya (44.4%), Universiti Sains Malaysia (49.5%) and Universiti Kebangsaan Malaysia (58.8%) depended largely on newspaper advertisements for their first job.

In summary, while the largest single proportion of graduates (41.0%) relied on newspaper advertisements to get their first job, a substantial proportion of graduates (28.8%) also found their first job through scholarship and other types of bonds. Personal contacts, either through friends or members of the family, was another method used by 12.6% of the graduates in acquiring their first job.

Table 6.9 shows in summary the methods of recruitment actually used by the employers. It can be seen that both the public and private sector employers depended heavily on newspaper advertisements as a means of recruitment. As regards the scholarship and bursary bonding system, the public sector relied more on this method than the private sector as a means of obtaining trained manpower. On the other hand, the private sector favoured personal contacts. The Ministry of Labour and Manpower did not play a significant role in the placement of graduates in either the public or private sectors.

Table 6.9

Distribution of Employers According to the Methods of Recruitment by Sector

Method of Recruitment	Sector					
	Public		Private		Total	
	N	%	N	%	N	%
Newspaper advertisements	75	98.6	203	89.8	278	92.1
Ministry of Labour	22	28.4	54	23.9	76	25.2
Bonded to employer by scholarship/bursary/grant	31	40.5	29	12.8	60	19.9
Through institution from which graduated	15	20.3	42	18.6	57	18.9
Personal contacts (with employer, etc.)	12	16.2	128	56.6	140	46.4
Other methods (employment agency, etc.)	2	2.7	20	8.8	22	7.3

Notes : Number of public sector employers is 76 and number of private sector employers is 226.

Percentages may not add to 100 due to rounding off.

6.5 The Waiting Period

Table 6.10 shows the anticipated waiting period of the undergraduates and the actual duration experienced by past graduates before obtaining their first job. It can be seen that 75.6% of the undergraduates were confident that they would find a job within three months of having completed their final examination. A further 14.5% indicated that they might have to wait for a duration of four to six months. Only 1.6% thought they might have to wait longer than a year to find their first job.

The study found that 65.6% of the graduates secured employment within the first three months after completing their university studies. A further 18.7% waited up to six months. Only 1.0% of the respondents had to wait for more than twelve months. On the whole, it appears that the undergraduates were quite realistic in their expectations. Current experience shows that, on the average, it takes about six months for the labour market to absorb most of the output of the various universities.

Table 6.10

Anticipated and Actual Waiting Period for Jobs
(Percentage)

Respondent	Waiting period (months)				
	0-3	4-6	7-12	More than 12	Non-Response
Undergraduates (N = 2,342)	75.6	14.5	4.6	1.6	3.7
Graduates (N = 1,670)	65.6	18.7	6.3	1.0	8.4

Table 6.11 shows some interesting differences in the waiting period experienced by the different sub-groups of graduates. There appears to be minimal difference between male and female graduates. Among the males, 72.8% found their first job within three months and 19.8% found theirs within the next three months. The corresponding percentages for the female graduates are 69.7 and 21.2. On the other hand, a slightly higher proportion of male (1.2%) than female (0.9%) graduates waited for more than twelve months.

Slight differences are also found among ethnic groups. Three-quarters of the Bumiputera graduates (75.5%) obtained employment within the first three months of job search. Within the same period, 69.1% of the Chinese and 61.0% of the Indian graduates also found employment. However, by the end of the sixth month, almost similar proportions of Bumiputera, Chinese and Indian graduates had found employment. A higher proportion of the Indian graduates (4.1%) than the Chinese (0.7%) and Bumiputera (0.7%) graduates had to wait for more than a year.

Over four-fifths of the graduates from professional courses compared with 77.6% of the graduates from the science-based courses and 64.7% of the graduates from the arts-based courses

Table 6.11

Waiting Period of Graduates for Jobs by Sex, Ethnic Group, Field of Study SES and Institution

Sub-group	Waiting period (months)							
	0 - 3		4 - 6		7 - 12		More than 12	
	N	%	N	%	N	%	N	%
Sex								
Male	754	72.8	205	19.8	65	6.3	12	1.2
Female	237	69.7	72	21.2	28	8.2	3	0.9
Ethnic group								
Bumiputera	606	75.5	133	16.6	58	7.2	6	0.7
Chinese	396	69.1	139	24.1	35	6.1	4	0.7
Indian	89	61.0	39	26.7	12	8.2	6	4.1
Field of study								
Arts-based courses[a]	485	64.7	185	24.7	70	9.3	10	1.3
Science-based courses[b]	392	77.6	84	16.6	25	5.0	4	0.8
Professional courses[c]	152	81.3	27	14.4	7	3.7	1	0.5
SES								
High	116	73.9	33	21.0	6	3.8	2	1.3
Middle	459	70.6	134	21.0	47	7.4	6	0.9
Low	243	74.5	61	18.7	21	6.4	1	0.3
Institution								
Universiti Malaya	424	67.2	143	22.7	59	9.4	5	0.7
Universiti Kebangsaan Malaysia	82	65.6	29	23.2	10	8.0	4	3.2
Universiti Sains Malaysia	73	72.2	21	20.8	5	5.0	2	2.0
Universiti Teknologi Malaysia	27	90.0	3	10.0	0	0.0	0	0.0
Universiti Pertanian Malaysia	46	85.2	7	13.0	1	1.9	0	0.0
Institut Teknologi MARA[d]	33	94.3	2	5.7	0	0.0	0	0.0
Overseas universities	377	75.4	93	18.6	25	5.0	5	1.0

Notes: a, b and c - See notes to Table 6.2
d - This refers to a small number of graduates produced by Institut Teknologi Malaysia.

Percentages may not add to 100 due to rounding off.

found their first job within the first three months. Generally, graduates in the arts-based courses experienced a longer waiting period. However, a closer look at the data reveals some differences among graduates in the three broad fields of study. For instance, among graduates from the professional courses, all medical graduates found employment within the first three months, compared with 96.4% of the architectural graduates and 79.5% of the engineering graduates. Among the arts-based graduates, 59.9% of the humanities (geography, history, languages, etc.) graduates found their first job within the first three months, compared with 69.4% of the economics graduates.

The waiting period by father's SES does not reveal any significant differences. In all the SES groups, only a small proportion had to wait for more than six months for their first job. However, it is interesting to note that among those who had to wait for more than a year, a slightly higher proportion was found among those from the high SES group (1.3%), compared with 0.9% and 0.3% among those from the middle and low SES groups, respectively. One plausible explanation is that graduates from the high SES group could be slightly more selective in their choice of jobs. They might have the financial resources which enabled them to wait until a suitable job opportunity turned up. The same might not be true of those with lower SES backgrounds. They might be compelled to find and take on jobs as quickly as possible to meet family and other obligations.

Table 6.11 also shows that graduates from certain universities, particularly the technologically and vocationally oriented universities, such as Universiti Pertanian Malaysia and Universiti Teknologi Malaysia, found their first employment more quickly than those from the other universities. Some 85.2% of Universiti Pertanian Malaysia graduates and 90.0% of Universiti Teknologi Malaysia graduates found their first job within the first three months. However, it should be noted that these universities produced fewer graduates than the other universities and a larger proportion of their graduates were bonded by scholarship and bursary awards. Some 67.2% of the graduates of Universiti Malaya, which produced by far the largest number of graduates, found their first job within the first three months. Nevertheless, nearly all graduates eventually found employment within the first twelve months. Only 3.2% of Universiti Kebangsaan Malaysia, 2.0% of Universiti Sains Malaysia, 0.7% of Universiti Malaya and 1.0% of overseas graduates had to wait longer than twelve months.

6.6 First Job Status

Nearly all the graduates interviewed began their careers in full-time employment. Only 1.6% began with part-time employment (see Table 6.12). Moreover, a fairly large proportion of the graduates (62.4%) began their careers with temporary employment and only 36.0% started with permanent jobs.

Table 6.12

Status of First Job Among Graduates

Status	Sector				Total	
	Public		Private			
	N	%	N	%	N	%
Permanent	333	45.1	191	26.7	524	36.0
Temporary	389	52.6	520	72.5	909	62.4
Part-time	17	2.3	6	0.8	23	1.6

Graduates who began their careers in the private sector were more often in temporary jobs than those whose who started work in the public sector. A total of 72.5% of the graduates in the private sector compared with 52.6% of those in the public sector commenced their careers with temporary appointments. On the other hand, 45.1% of the graduates in the public sector began with permanent appointments whereas only 26.7% of those in the private sector enjoyed similar status. It is probable that the private sector was more cautious in its recruitment practices. The employee might be required, to a greater extent than in the public sector, to show his/her suitability and worth before the employer would offer him/her a permanent position.

Table 6.13 shows the first job status of the graduates according to sex, ethnic group, field of study, SES and institution. It is interesting to find that a higher proportion of the female graduates (42.9%) than the male graduates (34.1%) were employed in their first jobs on a permanent basis. Some 64.3% of the male graduates began with temporary appointments compared with 54.8% of the female graduates.

Table 6.13

Status of First Job Among Graduates By Sex, Ethnic Group, Field of Study, SES and Institution

Sub-group	Permanent		Temporary		Part-time	
	N	%	N	%	N	%
Sex						
Male	339	34.1	639	64.3	15	1.5
Female	129	42.9	165	54.8	7	2.3
Ethnic group						
Bumiputera	284	37.4	460	60.6	15	2.0
Chinese	182	32.4	373	66.5	6	1.1
Indian	55	41.7	75	56.8	2	1.5
Field of study						
Arts-based courses[a]	301	40.6	422	57.0	18	2.4
Science-based courses[b]	144	32.0	303	67.3	3	0.7
Professional courses[c]	50	28.6	125	71.4	0	0.0
SES						
High	42	28.6	102	69.4	3	2.0
Middle	226	37.2	376	61.8	6	1.0
Low	115	37.8	183	60.2	7	2.3
Institution						
Universiti Malaya	259	41.7	346	55.7	16	2.6
Universiti Kebangsaan Malaysia	61	46.6	66	50.4	4	3.0
Universiti Sains Malaysia	40	41.2	55	56.7	2	2.1
Universiti Teknologi Malaysia	9	40.9	13	59.1	0	0.0
Universiti Pertanian Malaysia	16	35.6	29	64.4	0	0.0
Institut Teknologi MARA[d]	5	14.7	28	82.4	1	2.9
Overseas universities	125	27.8	324	72.2	0	0.0

Notes : a, b and c - See notes to Table 6.12
d - This refers to a small number of graduates produced by Institut Teknologi MARA.

Ethnic variations in first job status are not very significant. A higher proportion of the *Bumiputera* (37.4%) and Indian (41.7%) graduates than the Chinese graduates (32.4%) began with permanent employment. On the other hand, 2.0% of the *Bumiputera* graduates began with part-time employment compared with 1.1% of the Chinese and 1.5% of the Indian graduates.

Differences in initial employment status of the graduates from the different fields of specialization are more evident. It is interesting to note that only 28.6% of the graduates in the professional fields began with permanent appointments compared with 32.0% of the graduates from the science-based courses and 40.6% of the graduates from the arts-based courses. There are several plausible reasons. Firstly, a high proportion of the graduates from the arts-based courses were *Bumiputera* on government scholarships and bursaries. Secondly, a high proportion of the graduates in the professional fields who were not on public sector scholarships and bursaries were required to find employment in the relatively more demanding private sector. Thirdly, a small proportion of the graduates who began with temporary employment, especially those in the medical profession, could have begun as *locum tenens*. It is also interesting to note that none of the graduates in the professional fields began with part-time employment.

Table 6.13 shows that more than one-half of the graduates in each of the local universities began their career in temporary jobs. The proportions are somewhat higher for the graduates from the technologically and vocationally oriented *Universiti Teknologi Malaysia* (59.1%) and *Universiti Pertanian Malaysia* (64.4%). However, these proportions are far lower than the proportion for the overseas graduates (72.2%). For the overseas graduates, this finding is not unexpected. Until recent years, most overseas graduates were privately funded. Only a small proportion were sponsored by the public sector. The overseas graduates were, therefore, more likely to begin work in the private sector which, as discussed earlier, was probably more cautious in its recruitment practices. However, in the case of Universiti Teknologi Malaysia and Universiti Pertanian Malaysia, the findings do not appear to be consistent with a priori expectations, since over four-fifths of the graduates were on scholarships and other awards. However, it should be noted that the actual sample sizes were rather small. The findings may not reflect the actual situation.

6.7 Recruitment Criteria

At this stage, it is important to consider the perceptions of the students and graduates regarding the relative importance of certain frequently used recruitment criteria and then compare them with the perceptions of the employers. Table 6.14 shows the responses of the the three groups considered here, i.e. the sixth form students, graduates and employers.

The sixth form students perceived academic record to be the most important recruitment criterion. Some 69.2% of them perceived it to be very important while a further 27.1% thought it to be important. Next on the list comes past relevant experience in a similar kind of job. A total of 44.4% considered it very important. Aptitude test comes third, followed by performance at interviews and participation in sports. Criteria such as marital status and sex were perceived to be relatively unimportant by the majority of the sixth form students.

Among the graduates, a somewhat different ranking can be seen. Academic record was again perceived to be the most important criterion. However, the proportion who perceived it to be very important amounts to only 49.0%. This is only slightly higher than the proportion of graduates who considered performance at interviews to be very important (47.8%). Past relevant work experience was considered to be very important by 21.7% of the graduates. Aptitude test as a recruitment criterion was considered very important by 17.5% of them. Only a very small proportion of the graduates considered each of the other criteria, participation

Table 6.14

Degree of Importance of Certain Selection Criteria
(Percentage)

Selection critera	Degree of importance											
	Very important			Important			Not important			Non-response/uncertain		
	Sixth form students	Graduates	Employers	Sixth form students	Graduates	Employers	Sixth form students	Graduates	Employers	Sixth form students	Graduates	Employers
Academic record	69.2	49.0	27.7	27.1	42.4	70.0	2.5	6.0	2.0	1.2	2.6	4.3
Past relevant experience	44.4	21.7	31.3	47.5	27.5	50.8	6.3	45.4	4.7	1.8	5.4	13.2
Aptitude test	37.5	17.5	4.6	53.9	40.6	52.3	3.7	33.4	14.0	4.9	8.5	29.1
Interview	28.7	47.8	19.7	55.6	39.9	70.3	11.5	39.9	3.0	4.1	3.4	7.0
Sports activities	10.4	3.0	9.3	65.4	30.6	63.9	20.2	60.3	6.9	4.0	6.1	19.9
Cultural activities	4.5	2.0	4.8	54.0	21.1	22.6	36.6	70.4	12.2	4.9	6.5	60.6
Being married	3.6	0.9	0.4	18.8	5.9	10.8	72.8	84.6	66.1	4.8	8.6	25.9
Sex of a person	6.8	4.0	12.6	29.3	10.8	20.8	59.6	68.2	38.3	4.3	17.1	28.3

in sports and cultural activities, sex and marital status, to be very important.

The perceptions of the employers present an interesting contrast. While a sizeable proportion of the employers (27.7%) regarded academic record to be a very important recruitment criterion, they actually gave greater weight to past relevant work experience. Some 31.3% of the employers considered past experience to be a very important, making it perhaps the most important criterion. This is followed by academic record, performance at interviews and then sex. There are, however, significant differences in perceptions between the public and private sector employers (see Chapter 8).

6.8 Summary of Findings.

The discussion in this chapter provides useful information about the transition from university education to work. Firstly, students regarded university education, in particular success in university education, to be an important factor influencing their choice of career. Secondly, the most preferred method of acquiring labour market information was through practical experience during the course of study. Career publications did not appear to be a particularly important source of such information. Thirdly, on the whole, the principal method of job search was through newspaper advertisements. There are, however, differences in the method of job search between the prospective employees of the private and public sectors. Private sector jobs were most commonly found through newspaper advertisements. On the other hand, the most common method of obtaining a job for a fresh graduate in the public sector was through scholarship and bursary bonds. Fourthly, nearly all the graduates began their careers in full-time appointments. However, 62.4% of them actually began with temporary jobs. Sixthly, sixth form students and graduates perceived academic record as the most important recruitment or selection criterion. On the whole, employers tended to place as much, if not more, emphasis on relevant job experience and affective skills.

A closer look at the data reveals several other important findings. In particular, there appears to be no significant difference between males and females in their perceptions of the importance of university education in their choice of a career. On the other hand, students and graduates in the professional fields, *vis-a-vis* those in the non-professional fields, tended to see a stronger relationship between success in university education and the choice of a career. They also tended to prefer practical experience as a method of acquiring labour market information. First employment for the graduates in the professional fields was more likely to come through scholarship and bursary bonds than for the graduates in the non-professional fields. Furthermore, they tended to find employment more quickly than those in the non-professional fields. However, they had a higher propensity to begin their career with temporary appointments.

There are also some ethnic differences in perceptions and experiences. For instance, larger proportions of the *Bumiputera*, students and graduates, than their non-*Bumiputera* counterparts tended to prefer practical job experience and reading career publications as methods of acquiring career information. More *Bumiputera* graduates than non-*Bumiputera* graduates found their first employment through scholarship and bursary bonds. Non-*Bumiputera* graduates relied to a greater extent on newspaper advertisements and personal contacts. There are, however, minimal differences in their actual waiting period for their first job and in their initial employment status.

Chapter 7

The World of Work

7.1 Introduction

Educational planners are constantly hampered in their planning activities by a lack of information regarding the functioning of the labour market. This chapter seeks to provide part of this information. In particular, the chapter outlines the expectations of sixth form students and undergraduates and the actual experiences of graduates regarding work. Special attention is given to the patterns and trends of graduate employment so as to determine the degree of match or mismatch between the output of the universities and the demands of the labour market. Attention is also focussed on the system of rewards in the labour market that motivates graduates to participate effectively in employment.

The efficient utilization of the graduates probably rests on the established patterns and structures of employment and reward that graduates experience when they enter the labour market. Recommendations for improvement must be based on adequate knowledge of the internal functioning of the higher education system as well as the employment structures and the motivating forces that prevail in society. In this respect, this chapter also hopes to identify the major impediments to effective production and employment of high-level manpower in Malaysia.

7.2 Supply and Demand in the Labour market

This section examines the degree of correspondence between graduate supply and demand in the country. More specifically, it attempts to establish the capacity of the higher education system in meeting the needs of the economy and the appropriateness of the knowledge and skills acquired during training in the effective performance of jobs.

7.2.1 Patterns and Trends in Graduate Employment

Trends in graduate employment appear to indicate that the labour market has on the whole accomodated the output of graduates. The unemployment rate until recently has been insignificant. Graduates have been readily absorbed into those sectors that have expanded most rapidly.

The majority of graduates in the sample sought employment in the public sector which provided a haven of employment for the graduates of local universities (see Table 7.1). Among the graduates of the newer local universities, a very high proportion had found employment in the public sector. For example, of the graduates from Universiti Teknologi Malaysia and Universiti Kebangsaan Malaysia, 83.3% and 77.9%, respectively, had found employment in this sector.

Table 7.1

Distribution of Graduates by Institution and Sector

Institution	Public sector		Private sector		Total	
	N	%	N	%	N	%
Universiti Malaya	427	65.3	227	31.7	654	100.0
Universiti Kebangsaan Malaysia	113	77.9	32	22.1	145	100.0
Universiti Sains Malaysia	60	54.5	50	45.5	110	100.0
Universiti Teknologi Malaysia	25	83.3	5	16.7	30	100.0
Universiti Pertanian Malaysia	31	52.5	28	47.5	59	100.0
Institut Teknologi MARA	18	50.0	18	50.0	36	100.0
Universities in USA	12	23.1	40	76.9	52	100.0
Universities in Britain	102	38.2	165	61.8	267	100.0
Universities in Australia	10	21.7	36	78.3	46	100.0
Universities in Canada	2	6.5	29	93.5	31	100.0
Universities in Singapore	10	20.4	39	79.6	49	100.0
Universities in Taiwan	1	3.4	28	96.6	29	100.0
Universities in India	1	3.1	31	96.9	32	100.0
Total	812	52.7	728	47.3	1,540	100.0

The flow of local graduates into the public sector is largely a result of government sponsorship of its scholars. Graduates from foreign universities who had mostly studied at their own expense tended to flow into the private sector. Among such graduates, those from India (96.9%), Taiwan (96.6%) and Canada (93.5%) obtained private sector employment. More than 70% of the graduates from Australia, the United States of America and Singapore were also employed in the private sector. Overall, it would appear that local graduates tended to move into government service while graduates from foreign universities tended to opt for private sector employment.

The pull of the public sector continues to be very strong for the prospective local graduates. The undergraduates and sixth form students indicated a strong preference for public sector employment. Among the undergraduates, 56.0% wanted to work with the government and a further 12.6% with quasi-government or statutory bodies. Seven out of every ten (69.9%) sixth form students wished to be employed in the public sector and a further 13.5% in quasi-government bodies (see Table 7.2).

Table 7.2

Distribution of Sixth Form Students and Undergraduates by Sector of Employment

Sector	Sixth form students		Undergraduates	
	N	%	N	%
Government	1,240	69.9	1,362	56.0
Quasi-government	240	13.5	307	12.6
Private	201	11.3	466	19.2
Self-employed/ family business	68	3.8	114	4.7
Others	25	1.4	183	7.5
Total	1,774	99.9	2,432	100.0

Note: Percentages for sixth form students do not add to 100 due to rounding off.

Table 7.3

Distribution of Respondents by Sector of Employment and Ethnic Group

Sector	Sixth form students[a]			Undergraduates[a]			Graduates[b]		
	Bumiputera	Chinese	Indian and others	Bumiputera	Chinese	Indian and others	Bumiputera	Chinese	Indian and others
Government and quasi-government	906 (91.8)	485 (72.1)	84 (79.1)	1,056 (81.6)	413 (50.2)	147 (66.5)	579 (66.4)	93 (18.3)	56 (36.1)
Private sector, family business and others	81 (8.2)	188 (27.9)	22 (20.8)	237 (18.4)	410 (48.8)	74 (33.5)	293 (33.6)	414 (81.7)	99 (63.9)
Total	987 (100.0)	673 (100.0)	106 (100.0)	1,293 (100.0)	823 (100.0)	221 (100.0)	872 (100.0)	567 (100.0)	155 (100.0)

Notes: Figures in brackets are percentages.

a - Intended sector of employment.
b - Actual sector of employment.

Past preferences and patterns tend to influence present and future trends in employment. This is particularly true among the Bumiputera graduates. The majority of the Bumiputera graduates (66.4%) had been employed in the public sector while a larger proportion of the Chinese graduates (81.6%) had been employed in the private sector (see Table 7.3). The Bumiputera undergraduates retained this preference for public sector employment with 81.6% indicating their preference for employment in this sector. An even higher proportion of Bumiputera sixth form students (91.8%) preferred to work in the public sector. Clearly, prospective Bumiputera employees used the existing Bumiputera government employees as a reference group and perceived their employment opportunities to be in the public sector.

Past preferences for employment sectors among male and female graduates also seem to be perpetuated (see Table 7.4). Female graduates had in the past preferred the public sector for employment compared with their male counterparts. This pattern of choice seems to be further entrenched among prospective female entrants into the labour market. Female undergraduates and sixth form students overwhelmingly indicated their desire to work for government or statutory bodies.

Table 7.4

Distribution of Respondents by Sector of Employment and Sex

Sector	Sixth form students[a]		Undergraduates[a]		Graduates[b]	
	Male	Female	Male	Female	Male	Female
Government and quasi-government	640 (75.7)	836 (87.4)	807 (61.3)	849 (79.3)	518 (46.0)	235 (64.0)
Private sector, family business and others	206 (24.3)	121 (12.6)	510 (38.7)	222 (20.7)	608 (54.0)	132 (36.0)
Total	846 (100.0)	957 (100.0)	1,317 (100.0)	1,071 (100.0)	1,126 (100.0)	367 (100.0)

Notes : Figures in brackets are percentages.
a - Intended sector of employment.
b - Actual sector of employment.

Graduates and sixth form student preferred to work in three main sectors : services, commerce and manufacturing (see Table 7.5). About 42.7% of the graduates found employment in the services sector, while only about 14.9% and 12.2%, respectively, worked in the commerce and manufacturing sectors. Less than 10% of the graduates found work in each of the other sectors. The choice of employment sector of the sixth form students indicated that similar preferences prevailed among prospective graduates. In fact, the indications are that an even larger proportion than in the past propose to seek employment in the services sector. A total of 61.6% of the sixth form students preferred to seek work in this sector while 16.2% intended to be employed in commerce. Less than 8% chose to be employed in each of the other sectors.

Table 7.5

Distribution of Respondents by Industrial Sector of Employment

Industrial sector	Sixth form students[a]		Graduates[b]	
	N	%	N	%
Agriculture, forestry hunting and fishing	101	5.9	73	4.8
Mining and quarrying	27	1.6	73	4.8
Manufacturing	71	4.2	185	12.2
Construction	131	7.7	106	7.0
Electricity, water, gas and sanitary services	33	1.9	15	1.0
Commerce (wholesale and retail, banking, insurance and real estate)	276	16.2	225	14.9
Transport, storage and communication	14	0.8	88	5.8
Services (civil administration and defence, education, health, medicine, recreation and entertainment, other services)	1,047	61.6	646	42.7
Others	-	-	102	6.8
Total	1,700	99.9	1,513	100.0

Notes : a - Intended sector of employment.
b - Actual sector of employment.

Female graduates (see Table 7.6) had a higher tendency than male graduates to seek work in the services sector. Of the female graduates sampled, 62.2% worked in this sector compared with 43.3% of the male graduates. Male graduates, on the other hand, were more prominent in the manufacturing, mining and transport sectors. A similar preference for work in the services sector is also indicated by sixth form female students. As can be observed, a significantly higher proportion of the sixth form female students (73.1%) than the male students (49.1%) expected to work in this sector. On the other hand, a higher proportion of the male students (13.5%) than the female students (2.4%) expected to work in the construction sector.

Ethnically, graduate employment pattern reflected what has been traditionally assumed (see Table 7.6). More *Bumiputera* (56.2%) and Indian (43.5%) graduates sought jobs in the services sector than Chinese graduates (38.3%). On the other hand, more Chinese graduates than *Bumiputera* graduates were employed in manufacturing and commerce. There were 23.4% and 18.9% Chinese graduates in manufacturing and commerce, respectivly. The corresponding figures for *Bumiputera* graduates were 4.5% and 13.2%. Sixth form students' choices revealed the same ethnic occupational preferences. About 73.3% of the *Bumiputera* students and 75.8% of the Indian students compared with only 43.2% of the Chinese students indicated that they intended to work in the services sector. However, the proportions of Chinese students who expected to work in the construction and commerce sectors were substantially higher than those of *Bumiputera* and Indian students.

Graduates of all disciplines were employed in the services sector. However, larger proportions of the arts, economics and social science graduates served in this sector (see Table 7.7). Of the arts graduates, 75.5%, of the social science graduates, 78.6% and of the economics graduates, 57.7% found employment in this sector. Engineering graduates were mostly distributed among the manufacturing (29.9%), construction (28.2%) and services (11.1%)

Table 7.6

Distribution of Respondents by Industrial Sector of Employment, Sex and Ethnic Group

Industrial sector	Sixth form students[a]					Graduates[b]				
	Male	Female	B	C	I	Male	Female	B	C	I
Agriculture, forestry, hunting and fishing	72 (8.9)	29 (3.3)	75 (7.9)	23 (3.5)	0 (0.0)	48 (4.9)	9 (3.0)	28 (3.8)	27 (4.9)	9 (6.9)
Mining and quarrying	20 (2.5)	6 (0.7)	17 (1.8)	9 (1.4)	1 (1.2)	55 (5.6)	4 (1.3)	33 (4.5)	26 (4.7)	5 (3.8)
Manufacturing	55 (6.8)	15 (1.7)	15 (1.6)	49 (7.6)	5 (5.5)	142 (14.5)	15 (5.1)	33 (4.5)	128 (23.4)	20 (15.3)
Construction	110 (13.5)	21 (2.4)	24 (2.5)	101 (15.6)	4 (4.4)	76 (7.7)	18 (6.1)	67 (9.2)	30 (5.5)	3 (2.3)
Electricity, water, gas and sanitary services	25 (3.1)	8 (0.9)	6 (0.6)	21 (3.2)	5 (5.5)	14 (1.4)	1 (0.3)	7 (0.9)	7 (1.3)	2 (1.5)
Commerce (wholesale and retail, banking, insurance and real estate)	122 (15.0)	154 (17.4)	108 (11.4)	160 (24.7)	7 (7.9)	159 (16.2)	54 (18.2)	96 (13.2)	104 (18.9)	27 (20.6)
Transport, storage and communication	9 (1.1)	5 (0.6)	8 (0.8)	5 (0.8)	0 (0.0)	63 (6.4)	11 (3.7)	56 (7.7)	16 (2.9)	8 (6.1)
Services (civil administration and defence, education, health, medicine, recreation and entertainment, other services)	399 (49.1)	646 (73.1)	695 (73.3)	280 (43.2)	69 (75.8)	424 (43.3)	185 (62.2)	410 (56.2)	210 (38.3)	57 (43.5)

Notes: Figures in brackets are percentages. They may not add to 100 due to rounding off.
a - Intended industrial sector of employment.
b - Actual industrial sector of employment.

Key: B = Bumiputera.
C = Chinese.
I = Indian, Sri Lankans and Pakistanis.

Table 7.7

Distribution of Graduates in Employment by Field of Study, Institution and Industrial Sector

	Industrial sector																	
	Agriculture		Mining		Manufacturing		Construction		Electricity		Commerce		Transport		Services		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Field of Study																		
Arts	6	2.1	4	1.4	7	2.4	5	1.7	-	-	44	15.2	5	1.7	218	75.5	289	100.0
Economics	9	2.5	4	1.1	23	6.5	11	3.1	-	-	84	23.7	19	5.4	204	57.7	354	100.0
Social science	-	-	-	-	3	7.1	-	-	1	2.4	5	11.9	-	-	33	78.6	42	100.0
Science	41	8.7	41	8.7	99	20.9	27	5.7	10	2.1	71	15.0	42	8.9	142	30.0	473	100.0
Law	-	-	-	-	2	12.5	-	-	-	-	4	25.0	1	6.3	9	56.3	16	100.0
Engineering	4	3.4	11	9.4	35	29.9	33	28.2	5	4.3	6	5.1	10	8.5	13	11.1	117	100.0
Architecture	-	-	-	-	-	-	23	82.1	-	-	-	-	-	-	5	17.9	28	100.0
Medicine	-	-	-	-	1	0.1	-	-	-	-	3	27.3	-	-	7	63.6	11	100.0
Institution																		
Universiti Malaya	25	4.3	14	2.4	43	7.4	21	3.6	4	0.7	88	15.2	18	3.2	365	63.2	578	100.0
Universiti Kebangsaan Malaysia	4	3.3	3	2.5	3	2.5	3	2.5	-	-	13	10.7	3	2.5	92	76.0	121	100.0
Universiti Sains Malaysia	1	1.1	1	1.1	13	13.9	5	5.4	1	1.1	11	11.8	-	-	61	65.6	93	100.0
Universiti Teknologi Malaysia	-	-	-	-	1	3.6	13	46.4	-	-	1	3.6	5	17.9	8	28.6	28	100.0
Universiti Pertanian Malaysia	11	21.2	-	-	3	5.8	-	-	-	-	16	30.8	-	-	22	42.2	52	100.0
Institut Teknologi MARA	2	7.4	2	7.4	3	11.1	8	29.6	-	-	-	-	3	11.1	9	33.3	27	100.0
Universities in USA	2	4.5	5	11.4	6	13.6	1	2.3	-	-	16	36.4	3	6.8	11	25.0	44	100.0
Universities in Britain	2	0.9	17	7.3	52	22.4	35	15.1	7	3.0	29	12.5	39	16.8	51	22.0	232	100.0
Universities in Australia	2	4.2	4	8.5	9	19.1	9	19.0	-	-	6	12.8	1	2.1	16	34.1	47	100.0
Universities in Canada	-	-	3	8.3	9	25.0	3	8.3	-	-	12	33.3	2	5.5	7	19.5	36	100.0
Universities in Singapore	1	2.4	3	7.1	11	26.2	-	-	-	-	14	33.3	1	2.4	12	28.6	42	100.0
Universities in Taiwan	4	14.3	6	21.4	13	46.4	-	-	2	7.1	2	7.1	-	-	1	3.6	28	100.0
Universities in India	7	26.9	-	-	6	23.1	-	-	1	3.8	5	19.2	-	-	7	26.9	26	100.0

sectors. Science graduates worked mostly in the services (30.0%), manufacturing (20.9%) and commerce (15.0%) sectors.

More graduates from local universities than overseas graduates found employment in the services sector. Among the overseas graduates, commerce and manufacturing sectors were more popular. Of the graduates from the local universities, very large proportions of the graduates of Universiti Kebangsaan Malaysia (76.0%), Universiti Sains Malaysia (65.6%) and Universiti Malaya (63.2%) worked in the services sector. Only around 30% of the graduates from overseas universities worked in this sector. Overseas graduates were mostly employed in either the agricultural or construction sectors.

Since the vast majority of the graduates found employment in the services sector, prospective entrants to the labour market were conditioned to think that their best opportunities for employment would be in this sector. Groups that had exceptionally high representation in this sector, female and Bumiputera graduates, showed an even greater tendency to seek employment in service occupations. Very small numbers wished to work in the agricultural sector which had, in the past, shown a poor capacity to absorb graduates. There are, however, indications that future employment opportunities among males and non-Bumiputera graduates as well as among graduates of the professional faculties and specialized universities would be in the manufacturing and commerce sectors.

Almost all the graduates sought employment in two major occupational categories - professional, technical and related workers category and the administrative and managerial workers category (see Table 7.8). Among the graduates in the sample, 97.2% worked in these two categories while among undergraduates, 99.2% and among sixth form students, 94.7% intended to work in these two categories. Sixth form students revealed a slightly more varied choice of employment, with small proportions being interested in clerical, agricultural, and production and related jobs. For the vast majority, however, a professional, technical, managerial or executive position seemed to be the target at the end of graduation.

A discernible change in the pattern of employment is the shift away from administrative and executive occupations to professional occupations. Among the graduates, a very high proportion (58.3%) worked in administrative or executive jobs. However, only 44.5% of the undergraduates and 22.5% of the sixth form students intended to work in similar jobs. At the same time, a much larger proportion of the sixth form students (72.2%) compared with the undergraduates (54.7%) intended to seek professional and related jobs. The switch could be the result of rational choice based on the knowledge that even in the public sector future job opportunities might be more abundant in the professional occupations than in the administrative or executive occupations.

Table 7.8

Distribution of Respondents by Occupational Category

Occupational category	Sixth form students[a]		Undergraduates[a]		Graduates[b]	
	N	%	N	%	N	%
Professional, technical and related workers	1,185	72.2	1,218	54.7	644	38.9
Administrative and managerial workers	369	22.5	911	44.5	966	58.3
Clerical workers	48	2.9			1	0.3
Sales workers	15	0.9			45	2.5
Service workers	11	0.7			-	-
Agriculture, animal husbandry and forestry workers	11	0.7	16	0.8	-	-
Production and related workers	2	0.1			-	-
Total	1,641	100.0	2,225	100.0	1,656	100.0

Notes: a - Intended occupational category.
b - Actual occupational category.

Table 7.9 reveals in greater detail the trends in occupational placement of graduates. Instead of working as government administrators or as managers and company executives as they have done in the past, future graduates are keen to spread themselves over a wide range of occupations such as teachers, accountants, economists, bank officers, natural scientists, system analysts, computer programmers and medical, dental and veterinary officers. There appears to be a shift away from the more general administrative jobs into specialized occupations for which specific training and education may be needed.

Table 7.9

Distribution of Respondents by Type of Occupation

Type of occupation	Sixth form students[a]		Undergraduates[a]		Graduates[b]	
	N	%	N	%	N	%
Government and legislative administrators	287	17.8	1,028	44.6	541	35.8
Company managers and executives	125	7.7			220	14.5
Architects, engineers and related technicians	187	11.6	159	6.9	299	19.8
Accountants and economists	173	10.7	42	1.8	93	6.1
Natural scientists	46	2.9	112	4.9	56	3.7
Statistician, mathematicians, programmers and systems analysts	86	5.3	44	1.9	34	2.2
Teachers	355	22.0	589	25.5	c	c
Medical, dental, veterinary and related officers	109	6.8	123	5.3	c	c
Other professional personnel	246	15.2	210	9.1	270	17.8
Total	1,614	100.0	2,307	100.0	1,513	99.9

Notes: a - Intended occupation.
b - Actual occupation.
c - Classified under other professional personnel.

One way to gauge the future trends in graduate employment would be to examine the occupational choices of sixth form students. As can be seen from Table 7.9, the teaching profession attracted the largest number of respondents. A total of 22.0% of the respondents wanted to be teachers after graduating from the university. The other popular occupations, in rank order, were: government and legislative administrators (17.8%), architects, engineers and related technicians (11.6%), accountants and economists (10.7%), managers and executives (7.7%), medical, dental, veterinary and related officers (6.8%) and statisticians, mathematicians, programmers and systems analysts (5.3%).

Prospective entrants into the labour market carry with them the traditional occupational preferences of the sexes and ethnic groups (see Table 7.10). As can be seen from the data, some 21.5% of the sixth form males compared with only 3.0% of the females expected to be architects, engineers and related technicians. On the other hand, 33.7% of the female respondents compared with only 9.3% of the male respondents expected to be teachers. Also, the percentage of female students who wanted to be accountants is more than double that of the male students.

Higher proportions of the Bumiputera students than students of the other ethnic groups expected to be government administrators, teachers and legislative administrators. In fact, as high as 19.7% of the Bumiputera students compared with only 1.5% of the Chinese students and 5.6% of the Indian students desired to be government administrators. However, the proportions of Chinese and Indian students who expected to be architects, engineers and related technicians, accountants and statisticians, mathematicians, systems analysts and related technicians were substantially higher than those of Bumiputera students.

The study points to the fact that the higher education system has in the past responded to public sector needs by supplying the required administrators and professionals. Graduates have flowed into employment fields which required high-level manpower. As the public sector gradually became more complex, universities somehow

Table 7.10

Distribution of Sixth Form Students in Ten of the Most Popular Occupations After Graduation by Sex and Ethnic Group

Occupation	Sex		Ethnic Group			
	Male N = 754	Female N = 846	B N = 895	C N = 605	I N = 89	O N = 8
Teachers	70	285	250	90	16	0
	(9.3)	(33.7)	(27.9)	(14.9)	(18.0)	(0.0)
Government administrators	101	88	176	9	5	0
	(13.4)	(10.4)	(19.7)	(1.5)	(5.6)	(0.0)
Architects, engineers and related technicians	162	25	27	146	12	1
	(21.5)	(3.0)	(3.0)	(24.1)	(13.5)	(12.5)
Medical, dental, veterinary personnel and related technicians	44	65	39	59	11	0
	(5.8)	(7.7)	(4.4)	(9.8)	(12.4)	(0.0)
Economists	48	43	58	29	4	0
	(6.4)	(5.1)	(6.5)	(4.8)	(4.5)	(0.0)
Other professional and technical workers	46	37	41	28	10	4
	(6.1)	(4.4)	(4.6)	(4.6)	(11.2)	(50.4)
Accountants	24	58	25	52	5	0
	(3.2)	(6.9)	(2.8)	(8.6)	(5.6)	(0.0)
Legislative administrators	37	38	64	7	4	0
	(4.9)	(4.5)	(7.2)	(1.2)	(4.5)	(0.0)
Statisticians, mathematicians, systems analysts and related technicians	38	28	16	43	6	1
	(5.0)	(3.3)	(1.8)	(7.1)	(6.7)	(12.5)
General managers	28	18	24	22	0	0
	(3.7)	(2.1)	(2.7)	(3.6)	(0.0)	(0.0)

Notes: Figures in brackets are percentages. Percentage refers to per cent of the total number of respondents in each sub-group.

Key: B - Bumiputera.
C - Chinese.
I - Indian, Sri Lankans and Pakistanis.
O - Others.

extended their programmes to cater to new needs. Although there is a strong preference for employment in the public sector, present budgetary constraints faced by the government and rethinking about the size of the public sector may alter this preference in the future.

7.2.2 Relevance of Course of Study to Job Performance

The relevance of higher education received by graduates was assessed by the degree to which their education was perceived as being useful in carrying out the jobs they had taken up in the labour market (see Table 7.11). A substantial proportion of the graduates (88.0%) found that the courses they had undertaken in the university either very useful (31.6%) or useful (56.4%) to their job performance. Only 12.0% were of the opinion that their university courses were not at all useful in their jobs. However, 20.5% of the undergraduates thought their university education would be irrelevant to their jobs. Perhaps, unlike the graduates who have been in the labour market for some time, undergraduates tended to view the relevance of their courses to their future jobs more in terms of the content of their courses rather than in terms of the cognitive skills which they could acquire through their courses.

Table 7.11

Distribution of Respondents According to the Degree of Relevance of University Courses to Job performance

	Degree of Relevance							
Respondent	Very relevant		Relevant		Not relevant		Total	
	N	%	N	%	N	%	N	%
Sixth form students	1,023	57.3	655	36.7	106	6.0	1,784	100.0
Undergraduates	355	16.2	1,387	63.3	448	20.5	2,190	100.0
Graduates	519	31.6	928	56.4	197	12.0	1,644	100.0

From Table 7.12 it is apparent that over the years an increasing proportion of graduates had perceived their courses as being not useful to job performance. Thus, before 1969, only 5.6% felt that the courses were not useful, whereas for the 1970-1974 and 1975-1979 periods, 13.2% and 11.1%, respectively, felt that their courses were not useful. Of those graduating after 1980, 14.2% felt that their courses were not useful.

Table 7.12 further reveals that a larger proportion of the graduates who felt that their courses were not useful were from the fields of arts, economics and social science. By sharp contrast, 100% of the graduates in medicine, 97.7% of the graduates in engineering and 96.6% of the graduates in architecture found their courses to be very useful or useful. The fact that courses in medicine, engineering and architecture are specifically geared to the needs of their respective professional requirements could explain the high degree of perceived usefulness. Surprisingly, however, 11.1% of the law graduates found their course to be not useful. Furthermore, engineering graduates were less reluctant to rate their course as being very useful compared with medical and law graduates. This may be due to the fact that a fairly large number of engineering graduates had moved into administrative and sales jobs in which they did not make use of their specialized knowledge and skills directly.

There were only minor differences in perception among graduates by ethnic group, sex, SES and university. Among the ethnic groups, 90.0% of the Chinese graduates had found their courses either useful or very useful compared with 87.3% Bumiputera and 84.2% Indian graduates. The males, more than females, found their courses to be useful. Those from low SES backgrounds expressed that they had found their courses less useful than those from high SES backgrounds. Furthermore, higher proportions of the graduates from Universiti Malaya, Universiti Kebangsaan Malaysia and Universiti Sains Malaysia than the graduates from the other universities found their courses to be not useful.

Table 7.12

Usefulness of Courses of Study by Year of Graduation, Sex, Ethnic Group, Field of Study, State, SES and Institution

Variable	Very useful		Useful		Not useful	
	N	%	N	%	N	%
Year of Graduation						
Before 1969	47	37.9	70	56.5	7	5.6
1970 - 1974	89	32.7	147	54.0	36	13.2
1975 - 1979	179	30.5	342	58.4	65	11.1
After 1980	175	29.6	331	55.9	86	14.2
Sex						
Male	260	32.5	619	55.9	129	11.6
Female	104	28.8	204	56.5	53	14.7
Ethnic Group						
Bumiputera	296	33.7	471	52.6	112	12.7
Chinese	171	28.1	377	61.9	61	10.0
Indian and others	50	32.9	78	51.3	24	15.8
Field of Study						
Arts	105	27.6	207	54.5	68	17.9
Economics	115	28.8	232	58.1	52	13.0
Social science	10	21.7	29	63.0	7	15.2
Science	170	32.5	303	57.9	50	9.6
Law	14	51.9	10	37.0	3	11.1
Engineering	38	29.7	87	68.0	3	2.3
Architecture	22	75.9	6	20.7	1	3.4
Medicine	10	71.4	4	28.6	0	0.0
SES						
High	60	37.3	88	54.7	13	8.0
Middle	204	32.2	357	56.4	72	11.4
Low	112	28.3	229	57.8	55	13.9
Institution						
Universiti Malaya	182	26.3	400	57.8	110	15.9
Universiti Kebangsaan Malaysia	29	20.4	82	57.7	31	21.8
Universiti Sains Malaysia	28	25.7	64	58.7	17	15.6
Universiti Teknologi Malaysia	15	50.0	15	50.0	-	-
Universiti Pertanian Malaysia	17	29.3	36	62.1	5	8.6
Institut Teknologi MARA	20	57.1	12	34.3	3	0.2
Universities in USA	27	52.9	22	43.1	2	3.9
Universities in Britain	98	37.1	150	56.8	16	6.1
Universities in Australia	19	34.5	34	61.8	2	0.1
Universities in Canada	13	32.5	24	60.0	3	7.5
Universities in Singapore	23	46.9	24	49.0	2	4.1
Universities in Taiwan	8	27.6	21	72.4	-	-
Universities in India	14	42.4	18	54.5	1	3.0

Note: Percentages may not add to 100 due to rounding off.

The occupation-specialization matrix in Table 7.13 reveals some degree of mismatch between fields of study and areas of occupation, with the least degree of apparent mismatch among the professional fields. On the whole, graduates in architecture were working as architects, medical graduates were working in the medical profession and engineering graduates in the engineering profession. Among the natural scientists, 11.1% were in managerial positions in business, commerce and banking, 38.3% were in administrative jobs, 28.8% were working as research scientists and 3.3% as lecturers, education officers and teachers.

At other end of the spectrum, it may be noted that administrative, executive and managerial positions attracted graduates from a wide spectrum of specialization, though primarily from the fields of arts, economics, accounting and business studies. Natural scientists accounted for 9.4% of the administrative and executive positions while engineering graduates accounted for a further 7.1%. Arts, economics, business studies, accounting and social science graduates constituted 72.7% of those employed in administrative and executive occupations. Similarly, economics and business studies graduates comprised the bulk (69.4%) of the employees in managerial positions in business, commerce and banking. Broadly, it may be said that about 30% of the jobs in administration and management were taken up by graduates from fields other than arts, economics, business studies and social science.

On balance, it seems that the pull of the civil service has attracted graduates from a wide spectrum of fields. Graduates from the professional courses tended to work in their respective professions though some are found in administrative and managerial occupations. Graduates from the non-professional courses tended to gravitate towards administrative and managerial occupations in business, commerce and banking though a fair proportion could also be found in other occupations. On the whole, the degree of mismatch does not appear to be serious. In any case, mismatch of this nature may reflect elements of flexibility and adaptability arising from the cognitive skills learned while at university. For that reason, a small percentage of graduates may find the content of their courses somewhat removed from the actual demands of their jobs.

Table 7.13

The Occupation - Specialization Matrix of Graduates

	Occupation											
Speciali-zation	Managers in business, commerce and banking	Agricul-turalists	Lawyers	Architects and town planners	Health personnel and doctors	Engineers	Administrative and executive personnel	Scientists	Computer scientists and systems analysts	Writers journalists and lexico-graphers	Lecturers teachers and education officers	Others
Arts	20 (7.8)					2 (0.8)	161 (63.1)		2 (0.8)	36 (14.1)	33 (12.9)	1 (0.4)
Economics, accounting and business studies	261 (43.1)	3 (6.5)					328 (54.3)		6 (1.0)	1 (0.2)	2 (0.3)	3 (0.5)
Social science	13 (19.4)						47 (70.1)			3 (4.5)	4 (6.0)	
Natural sciences	20 (11.1)					16 (8.9)	69 (38.3)	52 (28.9)	3 (1.7)		6 (3.3)	14 (7.8)
Mathematics computer science and statistics	22 (24.2)					2 (2.2)	21 (23.1)		45 (49.5)	1 (1.1)		
Law	3 (13.0)		11 (47.8)				9 (39.1)					
Enginering and technical subjects	12 (4.2)	2 (0.7)		1 (0.7)		218 (76.0)	52 (18.1)		2 (0.7)			
Architecture and town planning				41 (85.1)			6 (12.5)		1 (2.1)			
Medicine	4 (25.0)				12 (75.0)							
Agriculture	11 (23.9)	20 (43.5)					15 (32.6)					
Others	10 (18.9)					2 (3.8)	29 (54.9)			1 (1.9)		11 (20.7)
Total	376	25	11	42	12	240	737	52	58	42	45	29

Note: Figures in brackets are percentages. They may not add to 100 due to rounding off.

7.3 Work Motivation

The preceding section shows that public sector employment dominated the graduate labour market and that the respondents had a strong preference for public sector employment. However, with the current budgetary constraints faced by the government and rethinking about the size of the public sector, there is clearly a need to change the existing preference for public sector employment. In particular, there is a need to motivate graduates to move into the hitherto less popular areas - work in the private sector and in rural areas. Since a better reward structure could succeed in bringing about the desired structural occupational change, the study attempted to identify the primary factors that induce graduates to respond to labour market needs. These factors are seen to be associated with the reward structure that is valued by the workers. In particular, the wage structure was scrutinized in conjunction with other rewards that influenced the occupational structure. Among these were the inducements that generated mobility, the inducements to work in rural areas and factors that created job satisfaction or facilitated career advancement.

7.3.1 The Wage Structure

Wide disparities exist in the earning capacity of those employed in the private and public sectors. Professionals such as doctors in the private sector on the average are known to earn at least two or three times more than those in the public sector. A study carried out by the Malaysian Medical Association in 1979 revealed this disparity very clearly.[1] The majority of doctors in the government sector (68%) earned a monthly income of below M$ 2,000 while wages for doctors in the private sector were generally over M$ 2,000 monthly. A high proportion of doctors in the private sector (67%) earned more than M$ 3,000 monthly, with 30% earning over M$ 5,000 monthly.

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[1] Malaysian Medical Association, 'The Future of the Health Services in Malaysia', Kuala Lumpur, Malaysian Medical Association, 1980, p.87.

In this study, data on wages were collected only from graduates employed in the private sector. Nearly 30% of these graduates failed to supply their income data. Of those who did, it is suspected that there was a tendency to understate their income. Nevertheless, the data would enable us to make some comparisons between the actual wages of the graduates in employment and the starting wages expected by the undergraduates and sixth form students upon graduation (see Table 7.14). A total of 87.8% of the graduates were earning more than M$1,100 per month. As for the undergraduates, 89.9% of them expected a similar salary. Among sixth form students, however, only 34.6% expected to earn more than M$1,100 and 51.1% expected to earn between M$801 and M$1,100 per month. The lower salary expectations of sixth form students could have been influenced by their perceptions regarding the increasing competitiveness of the future labour market.

Table 7.14

Distribution of Respondents by Expected and Actual Salary Level Per Month

Salary per month	Sixth form students[a]		Undergraduates[a]		Graduates[b]	
	N	%	N	%	N	%
Less than M$500	44	2.4	4	0.2	11	1.9
M$500 - M$800	222	11.9	43	1.8	13	2.2
M$801 -M$1,100	953	51.1	194	8.2	48	8.1
More than M$1,100	645	34.6	2,135	89.9	518	87.8
Total	1,864	100.0	2,376	100.1	590	100.0

Notes: Percentages may not add to 100 due to rounding off.
a - Expected salary per month.
b - Actual salary per month.

A closer look at the salaries of graduates reveals that wages in the private sector ranged from M$500 to above M$2,500 per month (see Table 7.15). Nearly one-half of them earned more than M$2,000 per month, with 23% of them earning income or more than M$2,500 per month. Graduates in the private sector may, in fact, be having a lower starting than in the public sector, but they can advance faster and reach a higher maximum. The starting salary of graduates in the public sector ranged from M$800 to M$1,200.

Table 7.15

Distribution of Graduates in the Private Sector by Salary Level Per Month

Salary per month	Number	Percentage
Less than M$500	11	1.9
M$500 - M$800	13	2.2
M$801 - M$1,100	48	8.1
M$1,101 - M$1,400	67	11.4
M$1,401 - M$1,700	114	19.3
M$1,701 - M$2,000	55	9.3
M$2,001 - M$2,500	146	24.7
More than M$2,500	136	23.1
Total	590	100.0

Variations in real and expected salary by sex, ethnic group, field of study, SES and institution are summarized in Tables 7.16 and 7.17. Female graduates experienced a definite disadvantage in the labour market. Only 72.0% of them earned more than M$1,100 per month compared with 89.6% of the male graduates. At the upper end of the salary range, the difference was even more marked. The graduate survey revealed that while 26.3% of the male graduates earned more than M$2,500 per month, only 8.6% of the female graduates enjoyed a similar income. Female expectations reflect very much the actual wage situation. Higher proportions of female students anticipated lower wage levels than their male counterparts.

Among the ethnic groups, Chinese graduates were the highest wage-earners, with 25.5% of them earning more than M$2,500 per month compared with 18.6% Bumiputera graduates. The difference is clearly at the upper end of the wage scale as the proportions of Bumiputera and Chinese graduates earning more than M$ 1,100 are almost similar (89% Bumiputera and 88% Chinese). Wage expectations among Bumiputera undergraduates are higher than the Chinese and Indians. However, among sixth form students, it can be observed that the proportion of the Chinese who had salary expectations of above M$ 1,100 is larger than that of the Indians which, in turn, is larger than that of the Bumiputera.

Table 7.16

Actual and Expected Salary Per Month by Sex, Ethnic Group, Field of Study, SES and Institution

Variable	Salary above M$1,100 per month		
	Sixth form students[a]	Undergraduates[a]	Graduates[b]
Sex			
Male	43.1	92.6	89.6
Female	26.7	86.6	72.0
Ethnic Group			
Bumiputera	26.6	94.0	89.0
Chinese	45.7	83.9	88.1
Indian[c]	38.8	84.4	83.6
Field of Study			
Arts-based			82.3
Science-based			91.9
Professional			98.5
SES			
High	41.5		90.6
Middle	31.4		85.8
Low	30.1		86.3
Institution			
Universiti Malaya		86.5	90.8
Universiti Kebangsaan Malaysia		92.7	75.0
Universiti Sains Malaysia		93.7	84.6
Universiti Teknologi Malaysia		91.9	100.0
Universiti Pertanian Malaysia		96.6	92.3
Institut Teknologi MARA			62.5
Overseas universities			89.4

Notes: a - Expected salary per month.
b - Actual salary per month of graduates in the private sector.
c - Includes Sri Lankans and Pakistanis.

Table 7.17

Actual Salary of Graduates in the Private Sector by Sex, Ethnic Group, Field of Study, SES and Institution

Variable	< M$500	M$501-M$800	M$801-M$1,100	M$1,101-M$1,400	M$1,401-M$1,700	M$1,701-M$2,000	M$2,001-M$2,500	> M$2,500
Sex								
Male	1.1	1.5	7.7	10.4	19.0	9.1	24.8	26.3
Female	6.5	6.5	15.1	15.1	22.6	7.5	18.3	8.6
Ethnic Group								
Bumiputera	4.0	0.5	6.5	8.5	25.1	9.0	27.6	18.6
Chinese	0.9	2.2	8.8	11.9	17.3	9.7	23.6	25.5
Indian[a]	-	6.8	9.6	16.4	12.3	8.2	21.9	24.7
Field of Study[b]								
Arts-based	3.0	3.9	10.8	10.3	17.2	4.7	25.9	24.1
Science-based	0.8	1.2	6.2	13.2	22.9	12.4	22.9	20.5
Professional	-	-	1.5	9.1	18.2	15.2	27.3	28.8
SES								
High	1.0	1.0	7.2	11.3	20.6	7.2	24.7	26.8
Middle	2.0	2.8	9.4	13.0	19.7	9.4	23.2	20.5
Low	0.2	0.2	8.5	11.1	17.1	9.4	29.9	18.8
Institution								
Universiti Malaya	2.7	1.6	4.9	8.6	13.0	6.5	32.4	30.3
Universiti Kebangsaan Malaysia	-	-	25.0	25.0	16.7	-	25.0	8.3
Universiti Sains Malaysia	11.5	3.8	-	11.5	19.2	7.7	38.5	7.7
Universiti Teknologi Malaysia	-	-	-	25.0	25.0	-	25.0	25.0
Universiti Pertanian Malaysia	3.8	-	3.8	7.7	65.4	7.7	7.7	3.8
Institut Teknologi MARA	6.3	-	31.3	12.5	12.5	6.3	12.5	18.8
Overseas universities	0.3	1.7	8.5	12.6	20.5	11.6	22.2	22.2

Notes: a - Includes Sri Lankans and Pakistanis.
b - See note to Table 6.2 in Chapter 6.

Graduates in the professional fields, especially medicine, enjoyed a decided advantage in earnings over graduates in the other disciplines. These graduates tended to be at the upper end of the wage range. Among graduates in the non-professional fields, economists were the highest wage-earners. In general, a larger proportion of professionals than science-based graduates earned more than M$1,100 per month. In turn, a larger proportion of science-based graduates than arts-based graduates were in this category. Different fields of specialization created different salary expectations among the students. Overall, larger proportions of sixth form students who intended to take up law, engineering, medicine and architecture expected higher wages than those who intended to take up science, arts, economics and administration.

Graduates from high SES origins appeared to have succeeded in maintaining an advantage over those from lower SES groups by earning higher wages. For example, among graduates from high SES backgrounds, 26.8% earned more than M$2,500 per month while only 18.8% of the graduates from low SES origins commanded a similar wage.

Among the local university graduates, a larger proportion of Universiti Malaya graduates than those from the other universities were earning more than M$2,500. Possibly a larger proportion of these graduates were from the older age group who were by 1982 well established in their jobs. Foreign graduates, on the whole, seemed to be higher wage-earners than local graduates.

To summarize, it may be stated that male graduates, graduates from high SES backgrounds, graduates in professional fields and graduates from overseas universities enjoyed an advantaged position in commanding high salaries. These patterns were reflected in the salary expectations of the undergraduates and sixth form students.

As regards the selection of university courses, the economic value of different disciplines seems to be well understood. The high demand for entry into certain disciplines every year is closely associated with the high earning power of graduates in such disciplines. However, wages alone are not a sufficient pull factor as indicated by the attraction of graduates to the public sector despite the fact that its wages are lower than those in the private sector. Factors like prestige, security, influence and easy initial entry into jobs may well be equally important factors in job choices.

7.3.2 Occupational Mobility

Of the 1,650 respondents in the graduate sample, 35.6% indicated that they had changed their occupations since their initial employment. Of these, 46.6% were from the public sector while 53.4% were from the private sector (see Table 7.18). There appears to be a higher tendency for graduates in the private sector to change their jobs as compared with those in the public sector.

Table 7.18

Change of Job Among Graduates

Change of Job	Public sector		Private sector		Total	
	N	%	N	%	N	%
Yes	274	46.6	314	53.4	588	100.0
No	561	52.8	501	47.2	1,062	100.0
Total	835	50.6	815	49.4	1,650	100.0

Some interesting differences can be noted among the various sub-groups of graduates (see Table 7.19). Of the ethnic groups, Bumiputera graduates changed jobs more frequently than Chinese or Indian graduates. The higher mobility among Bumiputera graduates could be a result of their taking advantage of the job opportunities available under the NEP. Among graduates of the different disciplines, the arts-based graduates changed jobs most frequently. This could partly be a result of their inability to find the type of jobs which they wanted. It could also be an indication of the greater flexibility of the training they received. Of the local graduates, those from Universiti Pertanian Malaysia and Institut Teknologi MARA had changed jobs more frequently than those from the other universities. Of the overseas graduates, those from the United States of America were most inclined to change jobs.

Table 7.19

Change of Job by Sex, Ethnic Group, Field of Study and Institution

Variable	Number	Percentage	Total
Sex			
Male	145	13.0	1,116
Female	46	12.8	360
Ethnic Group			
Bumiputera	145	16.4	885
Chinese	64	10.5	607
Indian[a]	18	11.7	154
Field of Study			
Arts-based	100	12.0	830
Science-based	97	18.4	526
Professional	19	10.2	186
SES			
High	22	13.3	165
Middle	92	13.4	686
Low	53	15.2	348
Institution			
Universiti Malaya	77	11.1	691
Universiti Kebangsaan Malaysia	15	10.3	145
Universiti Sains Malaysia	23	21.1	109
Universiti Teknologi Malaysia	-	-	-
Universiti Pertanian Malaysia	20	34.5	58
Institut Teknologi MARA	10	29.4	34
Overseas universitites	78	15.0	521

Notes: a - Includes Sri Lankans and Pakistanis.
b - See notes to Table 6.2 in Chapter 6.

From Table 7.20, it can be observed that higher pay was the main reason for a change in job, followed closely by better conditions of service and better prospects for promotion. By contrast, better location of the new job, inability to get along with colleagues and the loss of the previous job ranked low as reasons for change.

Table 7.20

Reasons for Change in Occupation

Reason	Number	Percentage	Rank
Higher pay	271	20.3	1
Better conditions of service	270	20.2	2
Better prospects for promotion	240	18.0	3
More suited to personal talents	227	17.0	4
Better use of training	194	14.5	5
Better location	91	6.9	6
Did not get along with the people you were working with	28	1.1	7
Lost previous job	13	1.0	8
Total	1,334	100.0	

The reasons for change among the sub-groups of graduates are shown in Table 7.21. For graduates in the professional areas of law and medicine, the perception that the new job was more suited to their personal talents was the most important reason, with over one-third of the graduates citing this as their reason for change. Graduates in all the other fields of study ranked higher pay, better conditions of work and better promotion prospects highly. Bumiputera graduates ranked better conditions of service, the job being more suited to their personal talents and higher pay as the first, second and third most important reasons, respectively. Chinese graduates ranked higher pay, better conditions of work and better prospects for promotion in that order of importance. Indian graduates cited better conditions of service as the most important factor, followed by higher pay and better promotion prospects. However, it appears that proportionally more female than male

Table 7.21

Reasons for Change of Job by Year of Graduation, Sex, Ethnic Group, Field of Study and Institution

Variable	Higher pay		Better conditions of service		Better use of training		Prospects for promotion		More suited to personal talents		Lost previous job		Cannot get along with colleague		Better location	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sex																
Male	186	20.1	189	20.4	126	13.6	167	18.1	160	17.3	9	0.9	19	2.1	68	7.4
Female	54	20.8	51	19.6	44	17.0	48	18.5	46	17.7	1	0.4	3	1.2	13	5.0
Ethnic Group																
Bumiputera	107	19.5	113	20.6	73	13.3	96	17.5	108	19.7	4	0.7	14	2.6	34	6.2
Chinese	136	21.3	121	18.9	102	16.0	117	18.7	97	14.9	8	1.2	11	1.7	48	7.5
Indian[a]	27	19.1	35	24.8	18	12.7	27	19.1	24	17.0	-	-	3	2.1	7	5.0
Field of Study[b]																
Arts-based	147	20.8	152	21.5	95	13.4	131	18.5	128	18.1	3	0.4	10	1.4	42	5.9
Science-based	89	20.4	79	18.1	71	16.2	79	18.1	65	14.9	6	1.4	13	3.0	35	8.0
Professional	20	18.5	24	22.2	17	15.7	18	16.7	18	16.7	1	0.9	3	2.8	7	6.5
SES																
High	33	19.1	33	19.1	29	16.8	38	21.9	25	14.5	1	0.6	3	1.7	11	6.4
Middle	106	19.9	110	20.7	71	13.3	97	18.2	96	18.0	4	0.8	11	2.1	37	7.0
Low	56	19.9	52	18.5	48	17.1	48	17.1	49	17.4	4	1.4	9	3.2	15	5.3
Institution																
Universiti Malaya	130	21.3	129	21.2	80	13.1	110	18.1	105	17.2	5	0.8	14	2.3	36	5.9
Universiti Kebangsaan Malaysia	17	13.6	32	25.6	17	13.6	27	21.6	21	16.8	-	-	2	1.6	9	7.2
Universiti Sains Malaysia	25	22.7	24	21.8	12	10.9	21	19.1	17	15.5	1	0.9	2	1.8	8	7.3
Universiti Teknologi Malaysia	1	11.1	1	11.1	2	22.2	2	22.2	2	22.2	-	-	-	-	1	11.1
Universiti Pertanian Malaysia	4	13.8	7	24.1	7	24.1	5	17.2	4	13.8	-	-	1	3.4	1	3.4
Institut Teknologi MARA	9	21.4	7	16.7	6	14.3	6	14.3	8	19.0	2	4.8	1	2.4	3	7.1
Overseas universities	80	21.7	64	17.3	63	17.1	67	18.2	64	17.3	4	1.1	8	2.2	29	7.9

Notes: a - Includes Sri Lankans and Pakistanis.
b - See notes to Table 6.2 in Chapter 6.

graduates were concerned with putting their training to better use. Male graduates, on the other hand, were preoccupied with conditions of service.

Clearly, while higher pay attracted graduates into occupations, better conditions of service and promotion prospects were almost equally important. Hence, high wages alone might not be sufficient to motivate graduates to move into new areas of employment.

7.3.3 Inducements to Work in Rural Areas

The students and graduates in the samples were asked to indicate their perceptions about factors which would encourage them to work or discourage them from working in rural areas. Factors that would encourage sixth form students and graduates to work in rural areas are summarized in Table 7.22. Among graduates, increased responsibility of the post serves as the most attractive inducement; nearly 81% of them rated this as an important or very important factor in persuading them to work in rural areas. Inducements related to financial and promotional aspects of the job were also rated rather highly by the graduates, with 77% of them rating these factors as important. Low cost of living was considered important by nearly 66% and the possibility of having a working place that is close to the family was important to 60% of the respondents. However, the opportunity for a leisurely life was relatively unimportant.

As in the case of the graduates, the factor which the largest number of sixth form students regarded as very important in inducing them to work in rural areas was a post of greater responsibility. Financial incentives and low cost of living were also regarded by relatively large proportions of the students to be very important. Family considerations and the opportunity for a freer life were not important factors. It is surprising, however, that only a relatively small proportion of the students regarded promotion prospects as very important. In general, it appears that work in rural areas is acceptable to the majority of the respondents if the incentives are right.

Table 7.22

Inducements to Work in Rural Areas

Factors which would encourage respondents to work in rural areas	Sixth form students		Graduates	
	Mean rating	Rank	Mean rating	Rank
Financial incentives	2.045	2	2.085	3
Better promotion prospects	1.791	4	2.091	2
A post of greater responsibility	2.252	1	2.126	1
Low cost of living	1.941	3	1.833	4
Opportunity for a leisurely life	1.695	5	1.544	6
Family considerations	1.653	6	1.707	5

Note: The mean ratings were calculated by giving a score of 3 to a factor which was considered very important, 2 to a factor which was regarded important and 1 to a factor which was regarded not important.

The perceptions of the graduates pertaining to rural work incentives by sex, ethnic group, field of study, SES and institution are presented in Table 7.23. Financial rewards were more important to graduates in the professional fields than graduates in arts-based and science-based fields.

Arts-based and science-based graduates also placed less emphasis on obtaining a job with greater responsibility. However, low cost of living in rural areas was attractive to them. Among the ethnic groups, Bumiputera graduates showed a slightly greater willingness to work in rural areas without greater financial rewards or better promotion prospects.

Table 7.24 shows some of the deterrents to rural work. A major deterrent for the majority of the graduates was the lack of physical amenities such as tap water, electricity, modern sanitation, communication and transport. Family considerations, which must include lack of facilities for children's schooling, health and welfare also loomed large as disincentives. It would appear that graduates would readily work in the rural areas if the facilities in these areas were considerably improved. It is not

Table 7.23

Mean Ratings of Graduates Regarding Rural Work Incentives by Sex, Ethnic Group, Field of Study, SES and Institutions

Variable	Financial incentives	Better promotion prospects	A post with greater responsibility	Low cost of living	Opportunity for a leisurely life	Family consider-ations
Sex						
Male	2.267	2.262	2.304	1.974	1.676	1.835
Female	2.216	2.225	2.201	1.909	1.660	1.948
Ethnic Group						
Bumiputera	2.158	2.146	2.243	2.093	1.701	1.815
Chinese	2.412	2.362	2.391	1.732	1.618	1.938
Indian[a]	2.441	2.479	2.483	2.023	1.729	1.886
Field of Study[b]						
Arts-based	2.175	2.214	2.289	2.000	1.860	1.869
Science-based	2.310	2.256	2.307	1.941	1.690	1.833
Professional	2.369	2.309	2.388	1.903	1.606	1.965
SES						
High	2.035	2.335	1.874	1.914	1.765	1.807
Middle	2.331	2.271	1.765	2.020	1.816	1.800
Low	2.244	2.214	1.712	1.940	1.814	1.797
Institution						
Universiti Malaya	2.204	2.223	2.218	1.916	1.610	1.846
Universiti Kebangsaan Malaysia	2.047	2.094	2.160	2.298	1.829	1.887
Universiti Sains Malaysia	2.089	2.155	2.314	1.602	1.738	1.856
Universiti Teknologi Malaysia	2.241	2.103	2.333	2.103	1.793	1.933
Universiti Pertanian Malaysia	1.914	1.966	2.246	2.052	1.737	1.661
Institut Teknologi MARA	2.361	2.361	2.278	1.971	1.771	1.758
Overseas universities	2.428	2.370	2.401	1.853	1.653	1.913

Notes: For the method of calculating the mean ratings, see note to Table 7.22.
a - Includes Sri Lankans and Pakistanis.
b - See notes to Table 6.2 in Chapter 6.

the pace of rural life that is being avoided but rather the inconvenience caused by the lack of modern facilities.

Table 7.24

Disincentives to Work in Rural Areas

Factors which would discourage respondent from working in rural area	Sixth form students		Graduates	
	Mean rating	Rank	Mean rating	Rank
Lack of tap water, electricity, modern sanitation, etc.	2.148	2	2.115	2
Communication and transportation problems	2.284	1	2.019	4
Separation from friends and relatives	1.430	6	1.571	7
Perception that rural life is dull and slow	1.206	7	1.281	8
No scope for self or professional development	2.048	3	2.071	3
Delays in promotion	1.575	5	1.781	5
Family considerations	2.010	4	2.176	1
Lack of recreational and entertainment facilities	-	-	1.712	6

Note: For the method of calculating the mean ratings, see note to Table 7.22.

Communication and transportation problems were regarded by the largest number of sixth form students to be important in discouraging them from working in rural areas. Lack of tap water, electricity, etc. and lack of scope for professional development were also serious discouraging factors. However, possible delays in promotion and separation from friends and relatives were not important discouraging factors. Likewise, the idea that rural social life could be dull and slow was not a serious deterrent. In fact, 78.7% of the respondents regarded this factor as not important. This is interesting in view of the general belief that people are attracted to the social life of the towns.

In general, factors concerning the students' future work, such as a post of greater responsibility, financial incentives and scope for professional development were regarded as important in inducing them to work in rural areas. Social factors such as separation from friends and relatives and the pace of rural life were regarded by most as not important. Lack of physical amenities appears to be an important discouraging factor.

As for the graduates, apart from financial considerations, factors pertaining to service conditions such as better promotion prospects coupled with the availability of good amenities would encourage them to take up work in rural areas.

7.3.4 Job Satisfaction and Career Advancement

To ascertain the degree of importance of factors that contributed to job satisfaction and career advancement, the graduates in the study were requested to rate a list of eleven factors as very important, important or not important. The mean ratings are shown in Table 7.25.

Table 7.25

Mean Ratings of Graduates Regarding the Degree of Importance of Factors in Job Satisfaction and Career Advancement

	Mean rating	
Factor	Job Satisfaction	Career Advancement
Interesting work	2.8	1.6
Good income	2.5	2.3
Improving competence	2.4	2.3
Work with people	2.3	2.1
Using special talents	2.3	2.5
Creative work	2.2	2.4
Helpful to others and society	2.1	2.5
Further studies	2.1	1.7
Travel	1.9	2.4
Supervise others	1.9	1.8
No supervision	1.7	2.3

Note: For the method of calculating the mean ratings, see note to Table 7.22.

An interesting job and a good income were two of the most important factors in providing job satisfaction. A number of other factors scored a mean rating of more than 2, especially factors concerning working with people, using special talents and creative work. At the bottom of the list were factors such as opportunities for travel, working in a supervisory position and work without any supervision. It is clear that on the whole, job satisfaction was derived from performing an interesting job, an economically rewarding job, work which allowed the use of talents, work which provided opportunities for improving one's competence and a job which entailed working with people.

Performing work that is helpful to others and society and making use of special talents were two factors that were likely to contribute most to the advancement of a person's career in Malaysia. Other factors that could contribute to career advancement were creative work, opportunites for travel, opportunities for improving one's competence and a good income. Among the factors that were rated least important in career advancement were further studies and interesting work.

Clearly, some of the factors that bring satisfaction in a job differ from those that help to further a career. Performing an interesting job received the highest rating for job satisfaction but received the lowest rating as a factor that may help career development. On the other hand, opportunities for travel and performing a job with no supervision were seen as contributing towards career development but were less likely to be a source of job satisfaction. Similarly, jobs that were seen as being helpful to others and society were more important for promoting careers than for bringing job satisfaction.

Jobs that really bring satisfaction may have to be foregone in the interest of career advancement. In particular, Malaysians may be taking up jobs that are not extremely interesting to ensure that they make progress in their career. However, the situation where both are attained is not impossible. One does not necessarily rule out the other. As can be seen from the table, a number of job characteristics received similar ratings for job satisfaction and career advancement. There is, therefore, good reason for being optimistic that graduates could be engaged in jobs that enabled them to achieve both job satisfaction and career advancement.

7.4 Conclusion

The pull and push of the forces of demand and supply in the labour market may have its impact on the education system, but often this takes time to work through. The education system in Malaysia is slow in responding to the labour market signals. Hence, educational planners and policy-makers may wish to initiate appropriate policies to help shift the direction and orientation of the education system. Such policies, however, will depend on accurate labour market information. The information provided in this chapter may help to indicate certain areas for policy consideration.

There appears to be a small degree of mismatch between training and employment at two levels. Firstly, regardless of the type of training, a sizeable proportion of the graduates sought employment in the prestigious administrative occupations. As a result, some of the graduates could be working in jobs not directly related to their specialized training. Secondly, even when graduates had been employed in jobs related to their studies, some had found their training somewhat irrelevant to their jobs. This mismatch is, however, more apparent than real. The mismatch can, in fact, be a good indication of the versatility and adaptability of the graduates.

The presence of a certain degree of congruence between employment opportunities of the past and future preferences suggests that educational institutions will face some pressure for the traditionally sought-after courses. Present expectations are clearly dictated by past preferences and occupational patterns, suggesting that to some extent the identification of sex and ethnic group with certain occupations will still be visible in the immediate future. However, the reality of the present market situation seems to be the best determinant of the educational opportunities that are and will be made available. The disappearance of openings in some of the traditional fields and the scarcity of qualified personnel in some of the new areas may well turn graduates to areas of study and jobs they have hitherto avoided.

Market forces, assisted by deliberate policies, may achieve the desired restructuring in higher education and employment. As such, factors that influenced the work behaviour of graduates, such as those that might draw graduates into newer and more challenging jobs in remote parts of the country were identified. It seems evident that besides good wages, Malaysian graduates are primarily motivated by good long-term career prospects and promotion opportunities. Similarly, work in the rural areas would be more tolerable if the prospects were promising and some of the basic amenities and facilities were available.

As has been indicated earlier, adjustments between supply and demand in higher educaton can only take place very slowly because of the long gestation period involved. In view of the urgency of national development needs, it seems desirable to take cognizance of the changes in the labour market that are likely to result from a changing economy and to initiate policies that might hasten adjustments of the education system and the labour market in the desired direction.

Chapter 8

Expectations and Experiences of Employers

8.1 Introduction

It is often said that the higher education system should seek to meet the country's needs. Such needs are often identified as the country's economic needs or, even more specifically, the employers' needs for qualified manpower though other needs are also recognized.[1]

This chapter discusses the employers' expectations and experiences. The primary objective is to obtain some hints which may prove useful to educational planners who are expected to match supply with demand. To achieve this objective, a theoretical framework is formulated to explain the differences in public and private sector responses to various issues pertaining to recruitment, the role of the university and the interrelationship between the universities and the employers.

The chapter is organized as follows: section 8.2 provides the theoretical framework of the analysis, section 8.3 discusses the relative importance which employers place on a set of recruitment criteria, section 8.4 describes the employers' perspective of the role of the university, section 8.5 surveys the extent of in-service training, section 8.6 discusses the interrelationship between the employers and the universities in terms of possible forms of co-operation and section 8.7 summarizes the principal findings.

8.2 Theoretical Framework

Our basic approach calls for a comparison of the relative importance which public sector establishments, on the one hand,

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[1] See, for instance, O. Fulton, 'Needs, Expectations and Responses: New Pressures on Higher Education', Higher Education, 13(2), 1984.

and private sector establishments, on the other, place on a set of recruitment criteria, and their perceptions of the role of the university. The public sector establishments constitute a very large bureaucracy, often the largest in any one country. With the exception of a few public sector enterprises, they are not engaged in competitive sale of their product. Furthermore, they have a more direct relationship with government and politics than the private sector establishments.

One important aspect of bureaucratic behaviour is impersonality (dehumanization).[2] It is argued that impersonality does away with the irrational elements of nepotism, personal preferences and capricious and uninformed judgement. In recruitment and promotion, for instance, it produces relatively even-handed rule application, with a tendency towards '... an inversion of ends and means whereby the rules become more important than the objective underlying their creation'.[3]

In Malaysia, public service recruitment and salary structures are based primarily on minimum educational qualification. However, promotions are based primarily on seniority rather than on merit.[4] In recruitment, ethnic origin may also play a very important role in Malaysia. Politics dictate that special privileges be given to Bumiputera in public service employment, particularly in the higher civil service.[5]

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[2] M. Weber, From Max Weber: Essays in Sociology (translated and edited by H.H. Gerth and C.W. Mills), New York, Oxford University Press, 1958, p.216.

[3] D. Nachmias and D.H. Rosenbloom, Bureaucratic Culture, London, Croom Helm, 1978, p.19.

[4] M. Puthucheary, The Politics of Administration: The Malaysian Experience, Kuala Lumpur, Oxford University Press, 1978, pp.101-2.

[5] In the elite Administrative and Diplomatic Service (formerly the Malayan Civil Service), for instance, the Federal Constitution provides for a racial quota of four Malays to one non-Malay, see Tun M. Suffian. An Introduction to the Constitution of Malaysia, Kuala Lumpur, Government Printer, 1976, pp.294-96.

Following Hallak and Caillods[6], we can group a set of recruitment criteria into three basic categories: the cognitive affective and ascriptive categories. In terms of the cognitive category (see Table 8.1), we can expect the public bureaucracy to place primary importance on educational qualification (or academic record).[7] This is the most objective cognitive criterion available to it. We can also expect the public sector establishments to place considerable importance on proficiency in Bahasa Malaysia since this is its lingua franca. In view of the fact that past relevant experience reduces the cost of training, the public sector may also place relatively great importance on it. Apart from these, we do not expect the public sector establishments to place much emphasis on the other cognitive criteria.

Bowles and Gintis[8] maintain that effective performance in most jobs depends to a great extent on certain non-cognitive personality traits. As affective criteria, personality traits (and possibly performance at interviews) may be important because these may reflect the ability to work and even to get on with superiors - factors which are deemed important for success in the public service.[9] However, since such affective criteria are less objective than the cognitive criteria, they are not likely to be accorded as much importance as the former. Among the ascriptive criteria, ethnic origin may be important for the reason stated earlier.

A somewhat different pattern of behaviour can be expected from the private sector. Private sector establishments are more competitive, less bureaucratic and more removed from politics than public sector establishments. They are likely to be more flexible and more willing to accept less objective criteria in recruitment. Although they are likely to accord considerable importance to academic record as an indicator of potential productivity, they are, at the same time, likely to accord considerable importance to experience. To the extent affective skills are important for effective job performance, to that extent are they likely to place importance on these skills.[10] Furthermore, as long as ascriptive characteristics reflect potential productivity, they are also likely to place greater importance on them than the public sector establishments.

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[6] J. Hallak and F. Caillods, Education, Work and Employment I: Education, Training and Access to the Labour market, Paris, Unesco-IIEP, 1980.

[7] This list is not exhaustive and the subdivisions are not completely exclusive.

[8] S. Bowles and H. Gintis, Schooling in Capitalist America, London, Routledge and Kegan Paul, 1976.

[9] See Puthucheary, The Politics of Administration: The Malaysian Experience, op.cit., pp.103-5.

Turning to the role of the university and employers' expectations, it is important to note that there are, in fact, several aspects to this issue.[11] We shall confine our discussion here to the content of the curriculum. This is the area where employers are thought to have more specific comments to make. The general notion is that employers desire greater vocational emphasis.[12] However, as Blaug argues, '... the vast bulk of jobs in the (modern) economy involve competences that are acquired on the job in a few weeks and require not a given stock of knowledge of facts and concepts, but the capacity to learn by doing'.[13]

In view of the high rate of obsolescence of technical skills,[14] what employers really need are employees who are educable and who have the potential to adapt to an ever changing environment. Blaug also argues that '... the cognitive knowledge which is said to be indispensable frequently consists of perfectly general communication skills and problem-solving abilities rather than occupation-specific competences ...'.[15] This does not, of course, deny the fact that certain professional jobs do involve training in specific cognitive skills, such as in the training of accountants, lawyers, doctors and computer scientists.

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[10] Bowles and Gintis, *Schooling in Capitalist America*, *op.cit*.

[11] Fulton identifies four major issues in which employers have a direct interest: the supply of graduates in sufficient but not excessive numbers, the content of the curriculum, the quality of the graduates and the attitudes and values of the graduates. See Fulton 'Needs, Expectations and Responses: New Pressures on Higher Education', *Higher Education*, *op.cit.*

[12] *Ibid*, pp.200-2.

[13] M. Blaug, 'Where are We Now in the Economics of Education?', *Economics of Education Review*, 4(1), 1985, p.20.

[14] Fulton, 'Needs, Expectations and Responses: New Pressures on Higher Education', *Higher Education*, *op.cit.*, p.201.

Given the above arguments, we examined (a) the extent of in-service training and (b) various possible forms of co-operation between the employers and the university. If Bowles and Gintis[16] and Blaug[17] are right, we can expect in-service training to be an important part of any establishment. In particular, if what employers want are educable or trainable people then in-service training must be an integral part of the establishment's manpower development programme. This would be true for both the public and private sector establishments. It is possible that the public sector establishments may place more emphasis on in-service training than the private sector establishments, not because they value it more than the latter but because in-service training is highly institutionalized. This is evident, for instance, in the establishment of training centres such as the National Institute of Public Administration.

As regards co-operation between the employers and the university, one possible form would be through the involvement of employers in the development of university courses. Apart from this, there is also room for other more practical forms of co-operation which may prove valuable. These forms include the provision of scholarships and vacation training for students by the employers. The extent of such co-operation will, however, depend greatly on the perceived costs and benefits of such co-operation to the employer. The employer will undoubtedly seek to maximize his net benefit stream. However, their concept of benefits will differ, particularly between the public and the private sector establishments. The former are likely to adopt a broader concept. Education which is likely to be viewed as consumption by the private sector establishments may be viewed as an investment by the public sector establishments.

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[15] Blaug, 'Where are We Now in the Economics of Education ?', Economics of Education Review, op.cit., p.19.

[16] Bowles and Gintis, Schooling in Capitalist America, op.cit.

[17] Blaug, 'Where are We Now in the Economics of Education ?', Economics of Education Review, op.cit.

8.3 Recruitment Criteria

Table 8.1 shows the relative importance which the public and the private sector establishments placed on a set of recruitment criteria. A glance through the cognitive criteria reveals several interesting differences between the two sectors. Public sector establishments tended to place far greater importance on academic record than the private sector establishments. Another criterion which the public sector deemed important was proficiency in *Bahasa Malaysia*. Public sector establishments also placed considerable importance on proficiency in the English language and past relevant experience. This is not surprising since the public sector cannot avoid interacting with the private sector, particularly big businesses, where the *lingua franca* is English. Past experience could be important as an additional piece of credential indicating the potential productivity of the individual. On the other hand, the public sector establishments did not accord much importance to achievement in aptitude test or to letters of recommendation. On the whole, the findings seem to accord well with our expectations.

In the private sector we find a rather different picture. Judging by the proportion of establishments which considered each criterion important or very important, the private sector placed relatively great importance on academic record. However, the proportion of establishments which considered this criterion very important is significantly less than that in the public sector (Z = 3.538, significant at the 1% level). Next comes proficiency in the English language. The proportion of establishments which considered this criterion very important is significantly more

Table 8.1

Frequency Distribution of Employers' Opinion Regarding the Degree of Importance of Recruitment Criteria by Sector
(Percentage)

Criterion		Very Unimportant	Unimportant	Neutral	Important	Very important
Cognitive						
Academic record	Public	0	0	0	61.1	38.9
	Private	0.4	2.2	5.8	73.0	18.6
Proficiency in Bahasa Malaysia	Public	0	2.7	2.7	62.2	32.4
	Private	0.4	12.1	21.0	61.6	4.9
Proficiency in English	Public	0	4.1	13.5	71.6	10.8
	Private	0	0.9	3.1	71.4	24.6
Achievement in aptitute test	Public	4.4	10.3	33.8	48.5	2.9
	Private	1.4	12.3	27.5	53.6	5.2
Strength of recommendations	Public	4.1	50.7	32.9	12.3	0
	Private	6.6	27.9	34.5	29.2	1.8
Past relevant experience	Public	0	4.2	20.8	54.2	20.8
	Private	0	4.9	10.7	49.6	34.8
Affective						
Personality	Public	0	1.4	4.1	74.3	20.3
	Private	0	1.8	4.4	69.9	23.9
Performance at interview	Public	0	2.7	9.5	67.6	20.3
	Private	0	3.1	6.2	71.2	19.5
Ascriptive						
Male	Public	2.7	41.9	32.4	18.9	4.1
	Private	6.7	29.5	37.1	21.4	15.4
Race	Public	5.4	36.5	29.7	24.3	4.1
	Private	12.8	47.8	15.5	20.8	3.1
Married	Public	8.1	63.5	24.3	2.7	1.4
	Private	11.5	52.7	26.5	9.3	0
Family background	Public	4.1	59.5	21.6	14.9	0
	Private	7.5	35.4	26.1	28.3	2.7

Key: ☐ = Public sector average.

X = Private sector average.

than that in the public sector (Z = 2.489, significant at the 5% level). Private sector establishments also placed relatively great importance on past relevant experience. The proportion which considered this criterion very important is also significantly greater than that for the public sector (Z = 2.199, significant at the 5% level). Proficiency in Bahasa Malaysia was considered important by 61.6% of the establishments but only 4.9% considered it very important. A total of 58.8% of the establishments considered achievement in aptitude test important or very important but less than one-third viewed letters of recommendation in similar light. These findings also accord well with our *a priori* expectations.

Turning to the affective criteria, both the public and private sector establishments placed considerable importance on them. About 70% of both the public and private sector establishments considered them very important. The proportions do not differ significantly between the two sectors. Almost similar proportions of the public and private sector establishments viewed performance at interviews in the same way. This finding seems to point to the pivotal role of affective behavioural traits emphasized by Bowles and Gintis[18] and Blaug.[19]

As for the ascriptive criteria, they do not appear to be particularly important to the majority of the employers. However, the proportion of private sector establishments which considered sex very important is significantly greater than that for the public sector (Z = 3.803, significant at the 1% level). Private sector establishments, operating in a competitive environment, were more likely to use sex as a handy indicator of differences in marginal productivity resulting from differences in training and labour force attachment. There is no significant difference between the proportions of public and private sector establishments which considered ethnic origin important or very important.

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[18] Bowles and Gintis, *Schooling in Capitalist America*, *op.cit.*

[19] Blaug, 'Where are We Now in the Economics of Education ?', *Economics of Education Review*, *op.cit.*

However, in the private sector, ethnic origin seems less important as a recruitment criterion than sex and family background.

Ranking the recruitment criteria by the proportion of establishments which considered the criterion very important, we find an interesting pattern (see Table 8.2). In the public sector, academic record and proficiency in Bahasa Malaysia were ranked significantly higher than all the other criteria. In contrast, the private sector establishments ranked past relevant experience more highly than academic record. However, the proportions which considered academic record, the affective criteria and proficiency in the English language very important do not differ significantly. The proportion which considered proficiency in Bahasa Malaysia very important is, however, significantly less than that for academic record.

Table 8.2

Ranking of Recruitment Criteria[a]

Criterion	Sector			
	Public		Private	
	Rank	Z-value[b]	Rank	Z-value[b]
Academic record	1	-	5	-
Proficiency in Bahasa Malaysia	2	-0.897	6	-4.499
Proficiency in English	6	-3.849	2	1.540
Past relevant experience	3	-2.264	1	3.895
Personality	4	-2.769	3	1.380
Performance at interview	4	-2.566	4	0.238

Notes: a - Based on proportion of establishments which considered the criterion very important.

b - Test of difference between proportions which considered each criterion very important compared with that for academic record.

8.4 The Role of the University

In the light of the differences in recruitment behaviour, we now examine the employers' perception of the role of the university. In particular, we wish to determine whether employers placed emphasis on the general or the vocational aspect of university education. Table 8.3 shows the responses of the public and private sector establishments to four possible roles on a five-point scale. All these are, in fact, primarily related to the development of cognitive skills and the content of university education. Given the difference in organizational behaviour, one would expect the public sector establishments to accord relatively greater importance to most of the four roles than the private sector establishments. The latter, being more concerned with their survival, might have a narrower concept of investment in education. In particular, one could expect the private sector to place relatively greater importance on the role of imparting specific skills since this would imply lower on-the-job training costs for the establishment.

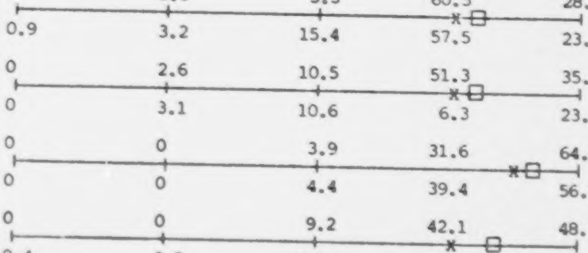
A glance through Table 8.3 shows that both sectors placed relatively great importance on all the four roles. However, a larger proportion of the public sector establishments tended to consider each of the four roles very important. This is in line with their wider perspective of investment in education. For instance, a significantly larger proportion of public sector, vis-a-vis private sector, establishments considered the role of creating an awareness of and sensitivity to societal needs and problems very important (Z = 3.574, significant at the 1% level). Being more concerned with societal issues, the public sector is likely to view this role as an investment. On the other hand, the private sector is more likely to view it as consumption.

This difference between the two sectors is also seen in the role of imparting a broad general education. Again, a significantly larger proportion of public sector establishments considered this role very important compared with the private sector establishments (Z = 2.148, significant at the 5% level). As

Table 8.3

Employers' Opinion Regarding the Degree of Importance of the Roles of the University by Sector
(Percentage)

Role		Very unimportant	Unimportant	Neutral	Important	Very important
Imparting specific skills	Public	0	5.3	5.3	60.5	28.9
	Private	0.9	3.2	15.4	57.5	23.1
Imparting general skills	Public	0	2.6	10.5	51.3	35.5
	Private	0	3.1	10.6	6.3	23.0
Developing the ability to think rationally and systematically	Public	0	0	3.9	31.6	64.5
	Private	0	0	4.4	39.4	56.2
Creating awareness of and sensitivity to societal needs and problems	Public	0	0	9.2	42.1	48.7
	Private	0.4	3.5	19.5	50.0	26.5



Key: □ = Public sector average
X = Private sector average

regards the two remaining roles, it is somewhat surprising to find that there are no significant differences between the two sectors in terms of the proportions which considered each of the roles important or very important. However, we find that a smaller proportion of the private sector establishments considered the role of imparting specific skills important or very important. This runs against the grain of popular notion that the private sector, more so than the public sector, expects the education system to supply occupation-specific manpower to meet its needs.

A more important point arises when we rank the four different roles on the basis of the proportion of establishments in each sector which considered each role very important. We find a similar ranking in the two sectors. The role of developing the ability to think rationally and systematically comes first, followed by the role of creating awareness and sensitivity, imparting general skills and, finally, imparting specific skills. This ranking also runs against the grain of popular notion. Yet, these findings should not be unexpected. A dynamic establishment needs high-level manpower, not in the form of individuals who can perform specific tasks, but in the form of individuals who can think and solve problems and who are sufficiently versatile to meet the needs of an ever-changing and competitive environment.

8.5 In-Service Training

The findings on the relative importance of the various recruitment criteria and the roles of university education lend support to the contentions made by Bowles and Gintis[20] and Blaug.[21] Employers appear to place considerable emphasis not only on good academic record but also on affective skills. Furthermore, employers view the principal role of university education as that of developing the individual's ability to think rationally and systematically.

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[20] Bowles and Gintis, Schooling in Capitalist America, op.cit.

[21] Blaug, 'Where are We Now in the Economics of Education ?', Economics of Education Review, op.cit.

The role of imparting specific skills is the least important of the four considered.

What employers want are people with general communication skills, problem solving abilities and the potential to adapt to a changing environment rather than those who merely possess occupation-specific skills. In view of this, employers must be prepared to provide in-service training to equip trainable and educable new employees with firm-specific skills.

Following Machlup[22], in-service training may be classified into two principal categories: on-the-job training and off-the-job training. In some instances the distinction may not be clear-cut. The former covers informal and formal on-the-job training. Formal on-the-job training in turn includes in-house and overseas training. Off-the-job training is defined as training provided by specialized training institutions which may include sponsorship to formal courses and seminars.

Table 8.4 shows the proportion of public and private sector establishments which provided the four principal types of in-service training. Over three-fourths of the public and private sector establishments provided informal on-the-job training which was by far the most common form of on-the-job training. This is not surprising since this type of training is simply the cheapest method of in-service training.[23] About one-half of the public and private sector establishments also provided formal and overseas on-the-job training. Overall, the proportion of public sector establishments which provided on-the-job training is only marginally larger than that in the private sector.

On the other hand, a significantly larger proportion of public sector establishments provided off-the-job training compared with the private sector establishments (Z = 4.373, significant at the

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[22] F. Machlup, The Production and Distribution of Knowledge in the United States, Princeton, Princeton University Press, 1962.

[23] L.C. Thurow, Generating Inequality, New York, Basic Books, 1976, p.79.

Table 8.4

Percentage of Public and Private Sector Establishments Providing In-Service Training

Type of training	Sector		Z-value[a]
	Public	Private	
On-the-Job			
Informal	75.3	79.2	0.713
Formal	53.4	46.6	1.026
Overseas	58.9	51.6	1.104
Off-the-job			
Training in specialized training institutions	64.4	35.7	4.373[b]

Notes: a - Test of difference between proportions.
b - Significant at the 1% level.

1% level). This can be explained by the fact that the public sector operated its own specialized training institutions, such as the National Institute of Public Administration, but few, if any, of the private sector establishments had such institutions. Furthermore, off-the-job training tended to be more expensive and yet less relevant to the needs of the private sector establishments since they had less control over the training programme.

The main point here is that a large proportion of both public and private sector establishments did, in fact, provide in-service training. In other words, employers were not only prepared to provide in-service training, most of them already did so to varying extent.

8.6 University-Employer Co-operation

The evidence strongly suggests that employers prefer general to specialist skills. More specifically, they prefer problem-solving skills to occupation-specific skills. This position, as Fulton[24] argues, is logically defensible. The immediate question now is how employers can co-operate effectively with the university in order to meet the expectations of the former more adequately.

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[24] Fulton, 'Needs, Expectations and Responses: New Pressures on Higher Education', Higher Education, op.cit., pp.200-2.

One possible form of co-operation would be through the involvement of employers in the design, implementation and evaluation of university courses. In Malaysia, there is very little involvement on the part of employers in such activities. An increased level of university-employer co-operation in this area could provide the setting for examining the needs of employers in specific skill areas and for identifying those qualities and characteristics of graduates that employers seek. It could also increase employers' understanding of the objectives of university courses and thereby modify their expectations of new graduates.

Apart from the above, there are other types of co-operation which may prove useful. These include the provision of scholarships, vacation employment and endowment of professorial chairs by employers. Given sufficient flexibility and coverage, these forms of co-operation can provide important clues on future labour market demands.

However, as emphasized above, the actual type of co-operation will depend greatly on perceived costs and benefits to the employers. Table 8.5 shows the proportion of public and private sector employers who indicated an interest in co-operating with the university in five different ways. A glance through Table 8.5 reveals two important findings. Firstly, when we rank the various forms of co-operation by the proportion indicating an interest in co-operating, we find the same pattern in both the public and private sectors. Vacation employment comes first, followed by financial support for the students, internships, prizes and endowment of professorial chairs, in that order. Secondly, a comparison between public and private sector responses shows that, with the exception of vacation employment, a significantly smaller proportion of private sector establishments was willing to co-operate with the university through these means. These findings are consistent with our a priori expectations.

Table 8.5

Percentage of Public and Private Sector Establishments Indicating Willingness to Co-operate with the Universities

Type of co-operation	Public	Private	Z-value[a]
Providing financial support to students	38.7	23.1	2.626[b]
Providing prizes for outstanding academic performance	17.3	10.9	1.446[c]
Endowment of professorial chairs	9.3	4.5	1.542[c]
Providing vacation employment for undergraduates	53.3	58.8	0.831
Providing assistance in internship schemes	33.3	14.9	3.465[b]

Notes: a - Test of difference between proportions.
b - Significant at the 1% level.
c - Significant at the 10% level.

Relative to costs, vacation employment is perhaps the most attractive form of indirect co-operation. Vacation employment is likely to be in the form of general training in which the trainee bears the brunt of the cost of training. The wage paid to the trainee will be less than his opportunity marginal product. In other words, the trainee will pay for part of the cost of training by receiving a wage rate that is below his current (opportunity) productivity.[25] Apart from shifting the cost of training to the trainee, the employer also benefits from the contact which he is able to establish with potential employees. The employer is able to extend its pool of potential employees and, at the same time, screen the potential employees on the job and form his own opinion about their future productivity. All things considered, this is likely to be the least costly and yet potentially most beneficial form of co-operation for the employer. It is, therefore, not surprising that 58.8% of the private and 53.3% of the public sector establishments were interested in this form of co-operation.

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[25] G.S. Becker, Human Capital, 2nd edition, New York, National Bureau of Economic Research, 1975, pp.19-26.

Financial support in the form of scholarships, loans and grants comes next in the list. This form of co-operation is more costly to the employer since it will bear a relatively larger proportion of the cost of general training without reaping much of the returns during the period of the students' university education. Nevertheless, it will be more beneficial to the employer than the other forms of co-operation, apart from vacation employment, if it carries with it a contractual obligation to serve after graduation.

Internship comes third. This is often associated with a few professions (e.g. medicine and law) and occurs after graduation. It can also be viewed as a form of post-graduate training. This form of co-operation is likely to be more costly to the employer since it must not only bear the cost of training but also forego the current productive effort of the employee.

Only 17.3% of the public and 10.9% of the private sector establishments were interested in co-operating by providing prizes for academic excellence. The low level of interest can be attributed to the fact that this form of co-operation provides minimal returns over costs. The employer will have little or no contact with the students apart from the recipient of the award. Furthermore, since no contractual agreement to serve the donor is contained in such awards, the potential employer is unlikely to benefit in any significant way from this form of co-operation.

Finally, only a very small proportion of public and private sector establishments showed any interest in co-operating with the university through the endowment of professorial chairs. This is not surprising since, for the costs involved, the direct returns to the employer are likely to be minimal.

As noted earlier, private sector establishments tended to show significantly less interest in the various forms of co-operation, apart from vacation employment, than the public sector establishments. This difference can easily be explained by the fact that private sector establishments tended to have a narrower view of investment in education.

8.7 Summary of Findings

Our study of recruitment criteria, the employers' perspective of the role of the university and the employers' interest in various forms of co-operation with the university produced several important findings. Firstly, differences in the relative importance which the public and private sector establishments accord to academic record can be explained in terms of differences in organizational behaviour. The public sector, which is highly bureaucratic, places prime importance on academic record primarily because it is the most objective criterion of cognitive ability. On the other hand, the private sector places as much, if not more, importance on past relevant experience and affective skills as they do on academic record primarily because, being more concerned with productivity and costs, they are less rigid and more willing to rely on less objective criteria.

Secondly, both public and private sector establishments actually accord considerable importance to affective skills, even though these seem less important than academic record in the public sector. If, as Bowles and Gintis[26] argue, effective job performance depends on certain personality traits or affective skills, then this finding is not surprising. Irrespective of the organizational set-up, employers must, in one way or another, be concerned with the job performance of their employees and with their ability to work with their colleagues.

Thirdly, although the public and private sector establishments differ in organizational behaviour and in the relative importance which they place on the list of recruitment criteria, they place great importance on the development of the individual's ability to think rationally and systematically, and least on the development of specific skills.

Fourthly, although the extent of in-service training varies from one establishment to another and between the public and private sector establishments, most employers do, in fact, provide in-service training as an integral part of their organizational set-up. It is, therefore, not surprising to find that employers placed great importance on the development of the individual's ability to think and least on the development of his specific skills. It would be easier to train an employee who is educable than one who only possesses job- or firm-specific skills.

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[26] Bowles and Gintis, Schooling in Capitalist America, op.cit.

Fifthly, our study shows that both public and private sector establishments indicated considerable interest in co-operating with the university through vacation employment for the students. This is not unexpected, given the underlying costs and benefits of this form of indirect co-operation.

Chapter 9

Summary and Conclusions

9.1 Introduction

This chapter provides a summary of the major findings of the study and makes suggestions for the development of university education in the country. It is hoped that the suggestions provided would be useful to planners and policy-makers faced with the task of relating the development of university education with employment objectives and the needs of the economy and society.

9.2 The Economy

At the onset of independence, Malaysia inherited three legacies from her colonial era. In economic terms, the country inherited a lop-sided economy in which natural rubber and tin together accounted for 85% of gross export earnings and 45% of GDP. In demographic terms, at 3.5% per annum, the rate of natural increase in the population was one of the highest in the world. The high rate of population growth was inevitably accompanied by a high rate of growth in the labour force. Thirdly, in social and political terms, Malaysia inherited a plural society in which the politics of race has become entrenched.

These legacies helped to shape the country's development objectives. The most abstract objective has been that of national unity. At the more concrete level, the objective of rapid economic growth through diversification has, under the NEP, given way to the objective of social restructuring through economic growth.

Through almost three decades since independence, Malaysia's attempt at rapid economic growth through diversification has met with considerable success. In the 1960s, real GDP grew at an average annual rate of 6.4%. In the 1970s, although real GDP growth fluctuated widely, it average 7.9% per annum. In the first half of the 1980s, in spite of the prolonged international economic recession, real GDP growth rate averaged 5.1% per annum.

In terms of economic diversification, the share of the agricultural sector in GDP declined from 30.8% in 1970 to 20.3% in 1985. This relative decline is also seen in the share of natural rubber in gross export earnings - from 55.1% in 1960 to 7.5% in 1985. In contrast, the manufacturing sector's share of GDP increased from 13.4% in 1970 to 19.1% in 1985.

Since the introduction of the NEP in 1971, priority has been given to the elimination of poverty and the elimination of the identification of ethnic group with economic function. Over the years, the incidence of poverty has declined. As regards the restructuring objectives, major structural changes in employment have occurred since 1971. The Bumiputera have experienced the greatest structural change. In 1970, 61.6% of them worked in the primary sector, 14.6% in the secondary sector and 24.2% in the tertiary sector. By 1980, Bumiputera employment in the primary sector had declined to 46.1% while employment in the secondary and tertiary sectors increased to 22.4% and 31.5%, respectively. Structural changes were less marked for the Chinese and Indians.

Significant occupational shifts have also occurred. In 1970, Bumiputera accounted for 72.0% of all agricultural workers but only 24.1% of administative and managerial jobs and 34.2% of production, transport and manual jobs. By 1980, the corresponding figures were 67.7%, 31.6% and 45.4%. During the same period, the Chinese in production, transport and manual jobs in the non-agricultural sectors declined from 55.9% to 42.6%.

In terms of corporate ownership, Bumiputra share has increased from 4.3 in 1970 to 17.8% in 1985. The original target for 1990 is 30.0%. It appears unlikely that the target will be achieved in spite of heavy governmental intervention.

Nevertheless, the NEP has, in fact, brought about a reduction of ethnic imbalances in income. The income disparity ratios (defined in terms of median incomes) show a definite decline in inter-ethnic income imbalances. The Chinese-Bumiputera income disparity ratio declined from 2.23 in 1970 to 1.92 in 1979 and then to around 1.76 in 1984. The Indian-Bumiputera disparity ratio has similarly declined from 1.62 in 1970 to 1.57 in 1979 and then to around 1.32 in 1984.

The overall picture is one of commendable achievement. The economy has gone through a period of remarkable growth and diversification. Although the targets of the NEP have yet to be fully achieved, considerable progress has been made.

In contrast to the remarkable achievement of the last fifteen years, the immediate future appears clouded. The prolonged recession in the industrial countries has implications for the Malaysian economy. The high rates of GDP growth recorded in the early 1980s were more apparent than real. In the face of international recession, the government undertook a series of countercyclical measures to maintain a high level of economic growth (an essential element of the NEP). To a considerable extent, the policies worked but at the cost of an upsurge in public sector share of economic activity and public external debt. In 1980, public sector share (including the off-budget agencies) of GNP was 30.1% but by 1983, it leaped to 39.4%. Growth in public sector expenditure resulted in a substantial increase in deficit financing which was, in turn, financed through net foreign borrowing. In 1979, public sector deficit (excluding the off-budget agencies) amounted to M$3,483 million. In 1980, it was M$8,112 million, rising to a peak of M$12,600 million in 1981 before falling off gradually to M$9,977 million in 1984. Net foreign borrowing increased from M$1,590 million in 1979 to M$3,125 million in 1980 and continued to rise in the ensuing years, reaching M$5,123 million in 1984. By 1984, external public debt outstanding amounted to M$20,847 million and external debt service ratio rose to 6.4%. The corresponding figures for 1980 were M$4,861 million and 1.8%.

Not unexpectedly, the 5MP for the period 1986-1990 sounds less optimistic than the 4MP. Growth in GDP is projected to average only 5% per annum. Prices for the country's traditional exports, including crude petroleum, are expected to remain unfavourable. Foreign exchange earnings are expected to decline further. Although the 5MP calls for a containment of the deficits in the government and external accounts, the World Bank's latest report projects a rising debt burden and a debt service ratio exceeding 15%. There are now indications that the debt service ratio may exceed 20% of gross export earnings.

The 5MP presents few remedies to counteract the economic slowdown. However, the World Bank's report proposed several key remedies. Among other things, the Bank recommends a move away from traditional light industries to the manufacture of intermediate and producer goods, a policy of privatization to provide a boost to private industrial activity, and a modification of the restructuring policy to allow for a more liberal industrial policy, particularly in relation to *Bumiputera* equity participation. The Bank warns that Malaysia must compete in an unusually tough international environment in which the race to industrialize will be won by countries where business endeavour is not saddled by stringent social obligations.

9.3 Labour Force and Employment

Between 1970 and 1985, the labour force increased from 3.7 million to 5.9 million, giving an average rate of increase of 3.2% per annum. Over the same period, employment grew at an anuual rate of 3.3% , increasing from 3.4 million to 5.5 million. The share of the agricultural sector in total employment decreased from 50.5% in 1970 to 35.7% in 1985. On the other hand, the services sector employment share increased from 31.5% to 41.2%. The share of the manufacturing sector in total employment increased from 11.4% to 15.1% and the share of the construction sector increased from 4.0% to 6.9%.

Much of the rapid employment creation indicated above took place before 1980. The general economic slowdown in the last few years has resulted in a slower rate of job creation. While 808,200 people joined the labour force between 1980 and 1985, the economy generated only 651,600 new jobs over the same period. As a result, the unemployment rate rose from 5.7% in 1980 to 7.6% in 1985. The incidence of unemployment was high among the young, particularly those in the 15-19 and 20-25 age groups. The unemployment rate among these groups was three times that of the overall rate.

An increasing proportion of the unemployed had formal education, with the incidence of unemployment highest among those with secondary education. The unemployment rate of females continued to be higher than that of males. Labour market information also indicated an increase in graduate unemployment, with the generalist graduates accounting for over 64% of the registered unemployed graduates.

A large proportion of the unemployed were first-time job-seekers. The tightening of the labour market was also evidenced by the longer waiting period before employment. About 25% of the unemployed waited for a year or more before being employed.

Despite overall surplus of educated manpower in the country, skill-specific shortages continued to be experienced in the labour market, particularly in the manufacturing sector. In the public sector, shortages of certain types of manpower such as legal, medical and veterinary personnel as well as marine, electronic and public health engineers were also experienced.

Given the anticipated slower rate of growth of the economy in the next few years, the short-term outlook for employment appears somewhat pessimistic. Unemployment rate has been projected to rise to 10.1% by 1990. In the past, the government and other services sector contributed to over 55% of the new jobs created. This cannot be expected to continue in view of the budgetary constraints to be imposed by the government under the 5MP. With the decline in importance of the agricultural sector in the economy, the non-agricultural sectors must be relied on to provide employment. The most important of these are the manufacturing, wholesale and retail trade and construction sectors.

9.4 The Education System

The educational objectives as spelled out in successive national development plans are : (a) to promote national integration through the implementation of Bahasa Malaysia as the medium of instruction, (b) to narrow the gap in educational opportunities between ethnic and socio-economic groups, (c) to orientate and expand the education and training system to meet manpower needs, and (d) to improve the quality and effectiveness of education for nation building.

Significant progress has been made in achieving some of the above objective. Except for Sarawak, Bahasa Malaysia is now the medium of instruction in schools. It is also the main medium of instruction in tertiary institutions. Imbalances in educational opportunities among ethnic and socio-economic groups have been rectified to a large extent at the primary and secondary school levels. At the degree level, Bumiputera enrolment in local universities has increased substantially.

Measures have also been taken to enhance the quality and orientation of education. A new primary school curriculum, with emphasis on the 3Rs, was introduced in 1983. At the secondary school level, attempts have been made to improve the quality of the science and mathematics curricula. Facilities for vocational education have been expanded to some extent. At the university level, the proportion of students in science technology and professional courses increased.

In broad quantitative terms, impressive progress has been made at all levels of the education system. By 1985, virtually all the children in the relevant age groups were enrolled in primary schools and 86.3% were enrolled in lower secondary schools. At the upper secondary, post-secondary and university levels, the proportions were 50.1%, 7.4% and 4.0% respectively.

Along with the rapid expansion of the education system, the expenditure for education also increased sharply. Total government expenditure for education in 1970 was about M$522 million (4.3% of the GNP). This increased to an estimated M$4,493 million (6.2% of the GNP) in 1985. University education absorbed about M$33.6 million and M$699.6 million of the total educational expenditure in 1970 and 1985, respectively. It is clear that while total expenditure for the education system as a whole increased about ninefold over the period, expenditure for university education increased by more than twentyfold.

In spite of the progress made, the education system faced a number of problems. Regional inequalities in educational opportunities still exist. Learning at all levels is highly examination-oriented. Facilities for in-service teacher training are inadequate to meet the needs of the new curricula introduced at the primary and secondary school levels. Likewise, facilities for vocational education and for certificate and diploma level courses need to be further expanded to meet the demand for skilled and semi-professional manpower. Facilities for university education, however, have expanded pretty rapidly over the last two decades. In spite of this expansion, there is still an excess demand for local university places. Currently, about 5,400 new graduates from local universities enter the labour market annually. With increasingly larger proportions of the graduates experiencing longer waiting periods before their first job, the problems of over-investment in university education and graduate unemployment are likely to become important issues in the years ahead.

9.5 Perceptions Regarding University Education

A total of 92.5% of the sixth form students intended to pursue university educaton, either immediately after completing sixth form education or after working for a while. Only 2.7% intended to pursue other types of non-degree tertiary education and 4.8% indicated that they intended to seek employment.

For both sixth form students and undergraduates, employment considerations, such as better employment prospects and obtaining professional qualifications, were the most important reasons for pursuing university education. However, some 18.2% of the undergraduates also indicated that they pursued university education to widen their knowledge. Scholarships were not an important incentive. Despite this perception, it is interesting to note that about 34.2% of the sixth form students, 55.4% of the undergraduates and 39.1% of the graduates were financed by government and quasi-government scholarships.

Some of the popular university courses among sixth form students, in rank order, were: education, public administration, economics, business administration or management and engineering. Bumiputera students were more inclined to choose arts-based courses whereas Chinese students were more inclined to choose science-based courses. One out of every four science students indicated that they intended to switch over to arts, economics, public administration and social science when they enter university.

The majority of the sixth form students had the benefit of some form of career guidance. Of those who did receive career guidance, 51.7% received it from their teachers and only 5.6% received it from the guidance and counselling or career masters. The majority of the sixth form students indicated that some form of guidance and counselling regarding courses of study and job opportunities would be useful before they seek university education. Among undergraduates, about 93.4% wanted a bureau to be established in the university to help them in the job search.

More than four-fifths of the undergraduates felt that the university education was too examination-oriented. A further one-fifth occasionally regretted for being in the university.

A substantial proportion of the graduates (88.0%) found that the courses they had undertaken at the university either very useful or useful to their job performance. Only 12.0% were of the opinion that their university courses were not useful. Trend analysis indicate that the proportion of graduates who perceived their courses as not being useful to job performance has been increasing. As for the undergraduates, 20.5% felt that the courses they had taken would not be useful to their jobs.

The graduates expressed that there was very limited educational mobility in the university and that there was little opportunity to rectify a wrong choice of field of study. The opportunity for educational mobility was especially low for graduates from the arts-based courses. Of the few who did change their fields of study, the changes were undertaken mainly because they perceived that the new fields would provide them with better career opportunities or because the new fields were more in line with their aptitude and interest. One-fifth of the undergraduates would want to change their fields of study if given an opportunity to do so. The main reason given for the desired change was interest in the new fields.

Developing the individual's ability to think rationally and systematically was considered by the employers to be the most important role of the university. The vocational role (i.e. the imparting of specific vocational skills) was ranked after sensitivity to and awareness of community problems and needs and imparting a broad, general education in importance. Few employers considered extra-curricular activities to be important.

About half the number of employers also indicated that they were willing to co-operate with the university to realize their manpower needs. The most preferred mode of co-operation was vacation employment for the students, followed by financial support in the form of scholarships and loans.

9.6 Transition from University Education to Work

Some 83.4% of the sixth form students and 68.6% of the undergraduates intended to work in the government and quasi-government sectors. About 11.3% of the sixth form students and 19.2% of the undergraduates were prepared to work in the private sector. Only 3.8% and 4.7% of the sixth form students and undergraduates, respectively, were prepared to be self-employed.

As for the graduates from local universities, a very large proportion found employment in the government and quasi-government sectors. Graduates from overseas universities, however, tended to flow into the private sector.

Most of the sixth form students and undergraduates would like to work in urban areas. Transportation and communication difficulties, lack of tap water and electricity and lack of possibilities for professional development were the most important discouraging factors to working in rural areas. Factors that would encourage them to work in rural areas were a post of greater responsibility, financial incentives and better promotion prospects. Social factors such as the pace of rural life and separation from friends and relatives were not important discouraging factors. The perceptions of the graduates were very similar to those of the students.

Sixth form students and graduates preferred work experiences while studying as a method of obtaining labour market information. Discussion with workers was also perceived to be an important method by graduates.

Academic record was perceived by the students to be the most important criterion in getting a job. Past experience in a similar kind of job was also regarded as important. Graduates regarded academic record, interviews, aptitude tests and past experience in a similar kind of job as important criteria. Employers in the public sector also placed great emphasis on academic record. Private sector employers, however, placed as much emphasis on affective characteristics and practical experience as on academic record.

The undergraduates perceived that the most important source of information regarding job opportunities was newspaper advertisements. University lecturers, career officers and friends were also important sources. Of the graduates, the majority obtained their first job through newspaper advertisements. However, a sizeable proportion of the graduates in the public sector obtained their first job because of scholarship bonding.

There was a preference for male rather than female graduates among employers in the private sector. This preference could be attributed largely to differences in labour force attachment between males and females. If at all female graduates were considered less suitable for any job, it was limited primarily to supervisory occupations.

The majority of the undergraduates were confident of getting a job that was consistent with their qualification. Furthermore, 75.6% of them were confident of getting a job within 3 months after completing university education, 14.5% of them expected to find employment within 3 to 6 months and about 6.2% expected a waiting period of more than 6 months. Among graduates, about 66.5% experienced a waiting period not exceeding 3 months and 1.0% experienced a waiting period of more than a year. Graduates with professional degrees appear to find jobs more readily than those with non-professional degrees.

9.7 The World of Work

An interesting job and a job with a good income are two of the most important factors in providing job satisfaction to graduates. A number of other factors such as work which provided opportunities for the use of personal talents, work which provided opportunities for improving one's competence and a job which entails working with people are also important in generating job satisfaction.

The majority of the students were reasonably realistic with regard to the starting salary they would get. A total of 51.1% of the sixth form students expected a starting salary of between M$801 and M$1,100 per month after graduation. A further 34.6% of them expected a monthly salary of above M$1,100. As for the undergraduates, 89.9% of them expected a monthly starting salary of above M$1,100. Among graduates in employment, 87.8% actually earned this salary.

On average, graduates in the private sector earned more than those in the public sector. Likewise, graduates in the professional fields tended to earn more than those in the non-professional fields. Also, male graduates tended to command a higher salary than female graduates. Among the ethnic groups, Chinese graduates were the highest wage-earners. These salary patterns were reflected in the salary expectations of sixth form students and undergraduates.

About 35.6% of the graduates sampled indicated that they had changed jobs during their working career. Better pay, better conditions of service, better promotion prospects and jobs which were more suited to their talents were cited as important reasons for the change.

There appears to be some degree of mismatch between the occupations of graduates and their fields of specialization. However, this mismatch was minimal for graduates in the professional fields.

9.8 Hints for Educational Planning

The study provides two important sets of hints for planning at the university level. The first has important implications for the methodology of manpower development planning and the second for the financing of university education in the country.

Despite the rapid expansion of university education over the past decade, trends in graduate employment demonstrate that the labour market has, on the whole, accomodated the output of graduates. As has been mentioned in Chapters 3 and 7, the situation appears to indicate that the educational structure of the labour force is largely supply determined. If this is the case, forecasting future demands for high-level manpower becomes exceedingly difficult.

The government sector has been the principal employer of graduates, initially due to the Malayanization programme and subsequently due to the rapid expansion of the public sector. The structure of university output and graduate employment by field of specialization is, therefore, largely a reflection of public sector requirements.

This situation is unlikely to reflect the optimum from the point of view of the economy as a whole. As such, mere manpower projections based on the existing structure for educational planning purposes may serve only to compound the existing less than optimum structure rather than to rectify it.

Furthermore, current budgetary constraints and rethinking about the size of the public sector means that in the foreseeable future the public sector cannot, as before, absorb the ever increasing supply of graduates. Graduates must increasingly turn to the private sector for employment. The desired private sector employment structure may be far different from what it is now. With the expected relative decline of the public sector, the overall structure which may emerge, if the education system is sufficiently responsive to private sector needs, may be different from the current public sector dictated structure.

In particular, if the Industrial Master Plan (IMP)[1] and the recommendations of the latest confidential report of the World Bank are adhered to, there will be a shift away from generalist education, which tends to meet public sector needs for administrators and teachers, towards the production of professionals in science and technology. The Industrial Master Plan calls for the production of more engineers, for instance, to meet the needs of mineral products, chemical and plastics products, ferrous-metal products and rubber products industries. The World Bank calls for greater emphasis on intermediate and producer goods in transport, machinery, metal and chemical industries and a move away from traditional light industries.

On another level, the study reveals high and increasing social demand for university education. About 93% of the sixth form students intended to proceed to the university. Furthermore, while the number of applicants for university education has been growing at an average annual rate of 23.5% over the last five years, university intake has grown at 8.1% over the same period. This implies an increasing number and proportion of unsuccessful aspirants.

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[1] Malaysia, *Medium and Long-Term Industrial Master Plan, Malaysia*, Vol. 3, Kuala Lumpur, MIDA-UNIDO, 1985.

The reason for this demand for university education is obvious. This study and numerous other studies reveal high returns to university education in terms of modern sector high-income employment and social status. A large proportion of the students cited better employment opportunities as the most important reason for pursuing university education. Undoubtedly, better employment opportunities would include access to a good income. In fact, the majority of sixth form students revealed quite realistic wage expectations. Students are, therefore, aware of the potential benefits of university education, quite apart from its social value.

In contrast to the high income, the private costs of local university education is, in fact, very low. About 59% of the undergraduates were on scholarships provided principally by the government. However, scholarship as an incentive to pursue university education was considered unimportant. The high probability of success in finding a high-paying modern sector job and the relatively low opportunity cost of university education reduced considerably the importance of scholarships in private calculus of the benefits and costs of university education.

Looking at the number of Malaysian students studying abroad at their own expense, even high private costs do not appear to be a definite deterrent. The high probability of acquiring a modern urban-sector employment which affords a standard of living far above the average more than compensates for the high costs of studying abroad. There is also evidence to suggest that foreign degrees are valued more highly than local degrees in the private sector.[2]

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[2] K.H. Lee, 'The Productivity of Education and the Premium for Foreign Degrees in LDC's', Economics of Education Review, 2(2), 1982.

The upshot of the structure of rewards to education is the chronic tendency for demand to exceed supply in terms of university places. To try to meet this demand seems hard to justify in terms of social costs and benefits and in view of the fact that successive national development plans and the Industrial Master Plan have highlighted the persistent and large shortage of subprofessional and skilled manpower, particularly technicians.

9.9 Suggestions for the Development of University Education

The following steps could be taken to ensure that university education is better placed to meet the needs of the economy and society in Malaysia.

(a) The first step is to persuade the education and training authorities (ETAs) to place less emphasis on manpower projections and more on manpower analysis of the operations of the labour market. This is important because experience shows that manpower planners cannot tell exactly how much and what type of skills are required at any given point of time in the future.[3]

The argument is not that the ETAs should abandon manpower projections completely. On the contrary, given that the public sector is the predominant employer of graduate labour, particularly in the fields of education, medicine and agriculture, projections which take into account probable shifts in government activities can be of enormous value. The argument is that the ETAs must place increasingly more emphasis on finding out how their graduates fare in the labour market. This is an important step forward in view of the expected relative decline of the public sector arising from budgetary constraints and current rethinking about the size of the public sector. As more graduates turn to the private sector for employment, there will be a need to know how they fare. Private sector demand is not only different from public sector demand, it is also less predictable.[4] Manpower analysis in effect provides a valuable feedback or a learning process which enables the ETAs to increase their external and internal efficiency. In line with this, there is a need for an on-going process of manpower analysis to generate the necessary information for planning purposes.

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[3] R. Hollister, 'A Perspective of the Role of Manpower Analysis and Planning in Developing Countries', in G. Psacharopoulos, *et.al.*, 'Manpower Issues in Educational Investment: A Consideration of Planning Processes and Techniques', World Bank Staff Working Paper, No. 624, 1983.

Apart from large scale national surveys, quarterly labour force surveys and national turnover surveys, another method which holds promise for manpower analysis is the tracer study. Tracer studies enable meaningful comparisons of labour market experiences and thereby generate a more dynamic picture of the operations of the labour market. An important feature of tracer studies is that they closely link the individuals to the institutions in which training was received.

(b) To meet the needs of a more comprehensive approach to manpower development planning, the existing institutional structure should be changed. The major organizations in manpower development planning are the Economic Planning Unit (EPU), the Public Services Department (PSD), the Ministry of Education (MOE), the Ministry of Labour (MOL) and the Malaysian Administration Modernization and Manpower Planning Unit (MAMPU). The existence of so many complementary planning bodies implies the need for a co-ordinating agency. There are good arguments for having a single central manpower development unit. Such a unit should have overall control and responsibility for planning and co-ordination, supported by the principal agencies charged with sectoral responsibilities covering the public sector, the private sector and the education and training sector.[5]

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[4] Ibid., p.65.

[5] International Bank for Reconstruction and Development, 'Tasks of Manpower Development Planning and Location of Institutional Responsibilities', Washington D.C., IBRD, 1983.

The Human Resources Section of the EPU seems well placed for the overall role under the following proposed structure. In this role it would have two principal responsibilities. Firstly, it would be responsible for the strategic aspects of manpower development planning. Its principal task would be to identify directions and priorities in national manpower development. It would, as it were, do for the whole economy what the Industrial Master Plan has done for the manufacturing sector. In other words, it would indicate targets to be aimed at in order to achieve goals for output in each sector. Secondly, it would be responsible for the co-ordination of delegated planning activities to ensure that the work of its supporting agencies cover all aspects of national manpower development objectives in a comprehensive and systematic manner.

The supporting agencies, as stated earlier, can be charged with sectoral responsibilities. In line with the recommendations of the World Bank,[6] the Research and Planning Division of the MOL is well-placed to take responsibility for manpower development planning in the private sector and for co-ordinating the activities of the public and private sector manpower training institutions. The Manpower Planning Unit of the PSD would naturally be responsible for forecasting future public sector manpower needs. This is particularly important for university education since the public sector is likely to remain the single largest employer of graduates in the near future. The responsibility for forecasting the demand for teachers could be placed in the hands of the Educational Planning and Research Division of the MOE.

The objectives of an educational plan based on manpower considerations cannot be realized unless the labour market allocates manpower appropriately. In general, it is the flexibility of the labour market which prevents the emergence of critical imbalances between supply and demand. Critical imbalances arise in the presence of constraints which limit the mobility of labour, the supply of labour and the willingness of firms to substitute one kind of labour for another.

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[6] Ibid.

With respect to high-level manpower, the government has a major role to play in the labour market. This arises because it is the predominant employer of high-level manpower. Manpower projections can be very useful but major problems may arise from the way incentives are structured. The public sector has a propensity to set wage scales uniformly across fields of specialization. As the Industrial Master Plan shows, there is very little incentive to pursue an engineering or technical career in the public service.[7] The lack of incentives acts as a constraint. Potential undergraduates, for instance, become more inclined towards the 'less demanding' but financially equally rewarding courses. In fact, the Industrial Master Plan suggests an increase in relative wages for technical occupations. However, incentives need not be confined to relative wages. Other forms of incentives, such as opportunities for career advancement, security of employment and conditions of service, could be just as important.

The main point here is that the structure of incentives can be a constraint which prevents the labour market from allocating high-level manpower in the desired direction. Analysis of this aspect of the labour market is clearly important. Hollister, for instance, argues that analysis of the structure of incentives in the professions is more important than making mere projections of demand and supply.[8] In view of the recommendations contained in the Industrial Master Plan and the World Bank's confidential report, it is clearly important to examine this aspect of the labour market. This must be accompanied by deliberate governmental policies designed to effect desired changes in the employment scene.

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[7] Malaysia, Medium and Long-Term Industrial Master Plan, Malaysia, op.cit., pp.22-5.

[8] Hollister, 'A Perspective of the Role of Manpower Analysis and Planning in Developing Countries', op.cit., p.74.

(c) Apart from acting on the labour market, the government may also institute educational policies so as to align the pattern of output of the education and training sector with the pattern of demand of the labour market. This study has highlighted a declining but still strong emphasis on the arts-based and non-professional courses in the local universities. Enrolment in these fields appear to grow too fast in relation to job opportunities. Some support for this contention can be seen in the fact that graduates from professional courses find it easier to obtain jobs, that mismatch in employment appears least among professionals and that a significantly larger proportion of graduates in the non-professional fields found their courses not useful to their job performance.

There is clearly a need to shift away from the arts-based and non-professional courses towards the professional courses - in line with the Industrial Master Plan, for instance. Apart from this obvious shift in emphasis, the curricula of the arts-based and non-professional courses could also be changed. Graduates in these fields are more likely to be employed in a wider variety of jobs than graduates in the professional fields. To ensure a better fit between graduates in the non-professional fields and employment, an interdisciplinary approach to university education could be adopted.

It is obvious that the labour market requires a combination of specializations. Public administration, for instance, requires knowledge not only of public administration but also knowledge of accounting, business administration, law and even the sciences and technology. Issues in agricultural development, rural development, extension education and urban planning require a combination of disciplines. The background of the non-professional graduates should be broadened to include elements of professional courses.

With an interdisciplinary approach, particularly for the non-professional courses, there is less need to be concerned with the problem of mismatch in the labour market. Graduates from such an interdisciplinary programme would be trained with flexibility and adaptability in mind. Some of the graduates' skills may be less utilized than others but this need not be an indication of irrelevance. Rather, the apparent mismatch may be an indication of adaptability and flexibility.

Furthermore, this study found that employers, in fact, place greater emphasis on the graduates' ability to think rationally and systematically than on their specific or vocational skills. Training in these aspects could make the graduates of non-professional and professional courses even more adaptable to the changing needs of the economy. The study also found that manpower development, at least at the top of the occupational ladder, calls for the development of affective skills. In particular, emphasis should be given to the development of '... self-esteem, self-reliance, versatility, and the capacity to assume leadership roles.'[9] In view of this, there is a need not only to change the curricula but also the pedagogy of university education in order to place more emphasis on the development of the students' ability to think rationally as well as the development of their affective skills.

(d) In multi-ethnic Malaysia, it may not be feasible to shift emphasis from the non-professional to the professional and science-based courses by acting on the supply side within a short period. *Bumiputera* students are more inclined, as the study found, to choose the arts-based and non-professional courses. A sudden shift towards the professional and science-based courses may result in an ethnic composition in the university that is not in line with the NEP. One possible solution is to act also on the demand side of university education.

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[9] Blaug, 'Where are We Now in the Economics of Education?', *op.cit.*, p.19.

As noted earlier, the social demand for university education is both high and increasing. This is an outcome of the rational behaviour of both parents and students. The relatively low direct and indirect private costs of university education and the generous scholarships available to a large proportion of the students in the local universities account partly for this high social demand. But costs do not seem to be a major explanatory factor. Indeed, scholarships, for instance, were not important incentives for pursuing university education. Furthermore, in 1985 there were 22,684 Malaysian students in degree level courses in foreign universities - about 37.5% of the total enrolment in the degree courses. About 45% were on scholarships; this still leaves a very large number who were privately financed.[10] The total cost at a foreign university is often very much higher than that at the local university. Nevertheless, students and their parents seem prepared to meet the cost.

The principal factor in the decision to pursue university education, even if it means going abroad at high private costs, appears to lie in the very high probability of securing a high-paying modern sector job with all its associated trimmings of social status and room for upward social mobility. Past experience shows that university education provides an avenue to good jobs, high social status and rapid upward mobility.

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[10] P.R. Moock, 'Education in Malaysia: A Review of Expenditures and Discussion of Issues', Education and Training Series Discussion Paper, Report No. EDT 11, Washington D.C., IBRD, 1985.

The evidence indicates that people are willing to pay for university education so long as it is seen to be a major avenue to a high-paying modern sector job. Available evidence also suggests that excess demand is so great that an increase in user charges would not affect overall enrolment much. The demand for education is relatively unresponsive to increases in private costs.[11]

In this light, one way to increase the external efficiency of the university education system is to impose user charges and then redistribute the revenue among selected fields. For instance, the government could reduce scholarships in the arts-based and the non-professional courses and instead charge for the services provided. The revenue raised could be used to finance the further development of professional courses or even used for other levels of education (e.g. to increase the supply of sub-professionals and technicians to meet the current demand for such skills).

Increasing the private costs of university education might of course keep qualified students from poor families out of university. To overcome this likelihood, the government could introduce a student loan scheme to improve students' access to financial credit. Such a scheme could be designed with variable interest charges, repayment periods and principal sums in order to influence preferences among students in favour of certain courses. For instance, a longer repayment period with lower interest charges could be applied to engineering and science to encourage students to undertake such courses. The scheme can also incorporate incentives by allowing students who complete their studies in the minimum required period or who obtain high levels of achievement to write off part of their loan. At least one study has found that students with loans are more likely to complete their studies successfully and in the minimum time than non-borrowers.[12]

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[11] G. Psacharopoulos, J.P. Tan and E. Jimenez Financing Education in Developing Countries: An Exploration of Policy Options, Washington D.C., IBRD, 1986.

A student loan scheme has other positive effects. Firstly, it could be more equitable than the existing system of subsidies in the form of low tuition charges and scholarships. With an extensive student loan scheme, competition for places in higher education would no longer be limited to applicants who can pay or who can secure a scholarship. Since a larger number of qualified and motivated students would be able to compete for places, the quality of intakes is likely to improve. Another positive effect of the scheme is that cost recovery resulting from the scheme would enable further expansion of university education within the country. This could result in a decline in the number of students studying abroad, resulting, in turn, in foreign exchange savings. There is some evidence to suggest that the inability of local universities to meet the social demand results in a large number of students studying abroad.[13]

Critics of student loan schemes as a form of cost recovery argue that they are difficult and expensive to administer. The main arguments are the high default rates and high costs of collection. Experience, however, shows that the incidence of default or late payment has been low even in developing countries.[14] High default rates could arise from poor record-keeping by the loan agency and lack of political will. Experience also shows that administrative costs are not exorbitant.[15] In fact, since most graduates are employed by the public sector, they can be traced through the government bureaucracy. Alternatively, they can also be traced through the income tax system. Some types of loans, such as those for the medical sciences, could be repaid in the form of national service in deprived areas in the country.[16]

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[12] A. Heerich, H. Shavlach and L. Seville, Intercountry Evaluation of Education, Washington D.C., U.S. AID, 1974.

[13] K.H. Lee and J.P. Tan, 'The International Flow of Third Level Lesser Developed Country Students to Developed Countries: Determinants and Implications'. Higher Education, 13, 1984.

[14] M. Woodhall, 'Student Loans as a Means of Financing Higher Education: Lessons from International Experience', World Bank Staff Working Paper, No. 599, 1983.

[15] Ibid.

All things considered, a system of user charges for university education with an extensive student loan scheme and with scholarships reserved only for the very deserving students could increase the internal and external efficiency and the equity of university education. The problems of default and administrative costs are not insurmountable.

(e) The revenue raised from user charges could be used in three ways. Firstly, it could be used to reduce the public sector burden of educational financing. Secondly, as discussed above, it could be used for the selective expansion of university education. Thirdly, the revenue could be channelled to other levels of education.

The third use of the revenue raised from user charges should receive serious consideration. Several studies, including work done in the MOE, show that the quality of school inputs has a positive effect on pupil achievement. The MOE study, interpreted with some caution for statistical reasons, suggests that teacher-pupil ratio, room-pupil ratio, the proportion of graduate teachers and single shift schools are positively related to pupil achievement.[17] Studies done elsewhere also show that school inputs have greater impact on pupils from poorer homes than on those from wealthier homes who have been exposed to a greater variety of out-of-school learning experiences.[18] The revenue raised from user charges could be used to improve the quality of school inputs particularly in the rural schools.

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[16] Psacharopoulos, *et al.*, 'Manpower Issues in Educational Investment: A Consideration of Planning Processes and Techniques', *op.cit.*, p.26.

[17] See, Malaysia, *An Investment Program for Primary and Secondary School Development, 1986-1995*, Kuala Lumpur, Educational Planning and Research Division and Development and Supplier Division, Ministry of Education, 1984 and H.S. Beebout, 'The Production Surface for Academic Achievement: An Economic Study of Malaysian Secondary Schools', Ph.D. dissertation, University of Wisconsin, Madison, 1972.

In Malaysia, the incidence of poverty is greatest among agricultural workers (37.6% in 1984). About 73.5% of the agricultural workers are Bumiputera. Thus, if the impact of school inputs is greater among poorer pupils, an improvement of such inputs could raise overall Bumiputera academic achievements. In time, the schooling system could place rural, primarily Bumiputera, students on par with their urban, mainly non-Bumiputera, counterparts.

In the long run, selection into local universities could be based primarily on merit. There would be a lesser need to rely on ethnic quotas in order to ensure that the student body reflects the ethnic composition of the population as a whole. This would also reduce costs arising from misallocation of resources in human capital investment when less able students are selected over more able ones in order to fulfil predetermined ethnic quotas.

(f) To speed up the above process, teacher training becomes very important. Selection of candidates for teacher training should be based primarily on merit to ensure that only the most suitable are selected. This is important since the quality of teachers has been found to have a significant effect on pupil achievement. Upon graduation, some of the best teachers should be sent to the rural schools.

Critics may argue that the better teachers are also the ones most likely to be reluctant to accept rural assignments. The present study found that graduates were prepared to work in rural or less developed areas provided they were given added responsibilities, better opportunities for career advancement and additional financial rewards. They were deterred primarily by the difficulties which their families would face - perhaps in relation to the quality of education for their children. These problems will have to be sorted out by the relevant authorities. A restructuring of incentives to favour those assigned to rural schools will be required. Furthermore, as the quality of rural schools improves, the importance of at least one factor which makes rural assignment less attractive is reduced. Stepping up rural development programmes will also go a long way to make rural assignments more attractive.

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[18] S. Hyeneman, 'Influence on Academic Achievement: A Comparison of Results from Uganda and More Industrialized Societies', Sociology of Education, July, 1976.

(g) Almost all students, even at the sixth form, seek university education with employment in mind. It is, therefore, very important that they be provided with good knowledge of future employment prospects. The present study found that the majority of sixth form students thought some form of guidance and counselling would be useful before they seek university education. The study also found that the proportion of those who liked their sixth form education very much tended to rise as the degree of satisfaction with the career guidance they received increased. Perhaps they found their course of study more meaningful once they could see how it is related to the world of work.

There are other positive effects to be derived from career guidance. Experience in some developed countries shows that publicity among the students and their parents on the difficulties of employment for graduates in certain fields of specialization and employment opportunities for skilled and technical sub-professional manpower helps reduce the social pressure on university education.[19] Career information and counselling can, therefore, be important ways of influencing students' choices of careers. However, it is important that such information be made available even at the secondary school level.

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[19] U. Teichler and B.C. Sanyal, Higher Education and the Labour Market in the Federal Republic of Germany, Paris, Unesco-IIEP, 1981.

The study found that the majority of the students received career guidance from their teachers. Only 5.6% received it from their professional guidance and counselling or career masters. There is an obvious need to develop an extensive and systematic career information and counselling programme. This should cover all levels of secondary schooling. Apart from providing labour market information, the programme should also stress on the importance of various recruitment criteria used by potential employers. For sixth form students bent on university education, it is important that they be informed, for instance, that academic record is only one of several important recruitment criteria. As the study has found, past work experience and affective skills are just as important, if not more important, than academic record, at least in the private sector.

(h) The importance of labour market information can hardly be denied. Such information can come from a variety of sources. For the graduate labour market, a placement system could serve to increase the external efficiency of university education by enabling students to cut down on their job search period and, at the same time, provide useful labour market information to students at various levels.

About 93% of the undergraduates wanted a bureau established in the university to help them in their job search. Firms which are not willing to rely on expensive and extensive recruitment methods (e.g. through the mass media) might be willing to participate in a placement programme. An extensive placement programme could, through economies of scale, be an inexpensive and yet extensive recruitment method. Firms could benefit not only from the lower costs but also from the larger pool of potential employees to choose from.

In line with the suggested institutional changes for manpower development planning, the Labour Office of the MOL could act as the central co-ordinating unit. Both private sector establishments and the PSD could be sources of information on graduate employment opportunities. Locating the placement system in the MOL has the added advantage in that the information gathered can be transmitted easily to the Research and Planning Division of the MOL. The Research and Planning Division, as discussed earlier, could be responsible for manpower development planning in the private sector and for co-ordinating the activities of the public and private sector manpower training institutions.

Given that almost all the undergraduates want a placement system within the university and the fact that few graduates make use of the existing labour offices, the latter could, in co-operation with the university, establish a presence in the university. Each university could be responsible for operating the service within its own campus while receiving all its information from the Research and Planning Division of the MOL. In fact, the service provided could extend to career counselling. This could be an important function since, under the existing system, there is little opportunity for undergraduates to rectify a wrong choice of field of study.

(i) One other important source of labour market information can come through increased interaction between the university and the private and public sector establishments. Vacation employment, the employers' most preferred form of co-operation with the university in realising their manpower needs, could also provide information on the future demand for graduates by field of specialization. The relative ease or difficulty encountered in placing students in vacation employment could be an indication of the kinds of high-level manpower employers are looking for.

Vacation employment also provides two other advantages. Employers gain by being able to screen potential employees before they are considered for permanent employment. Students also benefit from the work experience and as indicated earlier, work experience is one of the more important recruitment criteria. In fact, the study found that sixth form students also perceived work experience while studying to be the most preferred source of labour market information.

Given the value of work experience to employers and the students, the ETAs could examine the possibility of introducing an open certification scheme for those who choose to work while pursuing their sixth form education so as to enable them to accumulate credit points over a given period of time. More opportunities could also be given to those with work experience to further their education in the local universities. In addition, work-related educational programmes should be developed. This would lead to 'sandwich courses' in universities, i.e. educational programmes integrated with work experience in all fields of studies. Such programmes will, of course, require the co-operation of employees.

(j) Aside from vacation employment and the type of work-related programmes suggested above, universities and employers should also pursue other forms of co-operation. They could explore possibilities for co-operation in the area of university curricula so that programmes could be designed to keep pace with the needs of potential employers. This is not an argument for meeting the specific needs of potential employers. The objective of this form of co-operation is to identify the kinds of graduates that may be required to keep pace with changing technology in the work place.

The ultimate aim should be to produce graduates who can fit in easily and quickly in the work place and adapt to changing technology so that Malaysia can keep pace, if not overtake, its competitors. There is an urgent need, as the Industrial Master Plan shows, for increased labour productivity in

Malaysia. At present productivity levels are below those in neighbouring Asian countries, such as Hong Kong, South Korea, Singapore and Taiwan, with whom Malaysia must compete for export markets.[20]

(k) The findings of this study have important lessons for employers as well. Firstly, since labour satisfaction can contribute towards higher labour productivity, it is important for employers to note the factors which are considered important in generating job satisfaction. Sixth form students, undergraduates and graduates all find job satisfaction in interesting work, job security and good career prospects. Employers should, therefore, design appropriate career development programmes for their employees and also evaluate their job content regularly so to make the jobs more interesting, challenging and, therefore, more satisfying.

Secondly, as discussed earlier, graduates appear willing to work in rural or less developed areas if they are given added responsibilities, better opportunities for career advancement and additional financial rewards. On the other hand, they appear to be deterred by dificulties which their families may encounter. Clearly, it is important for private sector establishments and the government to examine these factors if they wish to increase the flow of skilled manpower to the less developed areas.

9.10 Concluding Remarks

At this point it may be useful to highlight some of the problems encountered in the research as well as the limitations of the study. In view of the fact that the surveys involved four teams of researchers, each dealing with a different population, the actual co-ordination of the surveys proved to be a difficult and time-consuming task. Apart from this, there was also the problem of having to ensure that common definitions and classification schemes were used in the four surveys. Even though efforts in this direction had been successful to a large extent, minor variations relating to educational qualification, area of specialization and occupational category appeared among the four sets of data of the research project. This made detailed comparison and analysis of some of the findings across the four sets of data difficult.

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[20] Malaysia, Medium and Long-Term Industrial Master Plan, Malaysia, op.cit., pp.9-10.

Another problem encountered in the study relates to the the representativeness of the sample. While it was possible to check on the representativeness of the sixth form student sample on the criteria of sex, race and area of specialization (arts or science), such a test was not possible with the other samples because of lack of adequate background information. Furthermore, in the case of the private sector employer survey, the response rate was relatively low and this, invariably, reduced the reliability of the data.

The survey method used in the study suffered from the inherent weaknesses of such a research tool. For example, in using such a method the individuality of the units of observation was lost and the scope for analysing generalizable aspects of the relationship between education and work was limited.

The questionnaires used in the study could also be criticized. Some of the questions could have been more carefully formulated to increase the precision of the responses. Also, some of the questions required the subjects to recall their past and this introduced the problem of recalling error. Although an open item had been included in the closed questions, we could hardly obtain any convergence on that response. Usually the respondents did not have any item to add to the list. Despite the fact that identification of the items was done with extensive consultations among the researchers, the closed questions could generate bias in the responses.

Data collected on attitudes and perceptions by means of questionnaires should always be interpreted with care. A sophisticated analysis based on imprecise information would be meaningless. For this reason, relatively simple measures such as percentages, averages, cross-tabulations and tests of significance between proportions were used to describe the survey data.

It should be pointed out, however, that the aim of the study was not to measure the relationship between university education and the labour market precisely. Neither was the aim to determine the precise influence of one variable on the other in quantitative terms. The basic aim was to obtain information in respect of the discrepancies in the responsiveness of the universities to the labour market needs, the discrepancies in the distribution of university education and employment opportunities, the differences in aspiration among students, graduates and employers in terms of the performance of the universities, and the operations of the labour market. As such, despite the limitations mentioned above, we feel that the study has generated a substantial knowledge base that could prove useful to decision-makers and planners for making enlightened decisions regarding university education and employment in the country.

Appendix I

Sixth Form Student Questionnaire*

Please respond by placing a tick (✓) in the appropriate box or filling in the required information in the space provided.

For coding only.

Name of your school: ____________________

1. Your age: _____ years

2. Your sex:
   - (1) Male ☐
   - (2) Female ☐

3. Your ethnic origin:
   - (1) Malay and other Bumiputera ☐
   - (2) Chinese ☐
   - (3) Indian/Sri Lankan/Pakistani ☐
   - (4) Other (specify) ____________ ☐

4. Indicate the state in which you were born:
   - (01) Perlis ☐
   - (02) Selangor ☐
   - (03) Melaka ☐
   - (04) Johor ☐
   - (05) Kedah ☐
   - (06) Federal Territory of Kuala Lumpur ☐
   - (07) Negri Sembilan ☐
   - (08) Pulau Pinang ☐
   - (09) Perak ☐
   - (10) Kelantan ☐
   - (11) Pahang ☐
   - (12) Trengganu ☐
   - (13) Sabah ☐
   - (14) Sarawak ☐
   - (15) Other (specify) ____________ ☐

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* Translated from Bahasa Malaysia

For coding only.

5. Who is your present guardian ?

(1) Father ☐

(2) Mother ☐

(3) Relative ☐

(4) None ☐

6. What is the highest level of education of your parents and guardian ? (Answer Question 6 - 12 even if your parents are deceased).

	Father	Mother	Guardian
(1) No formal schooling	☐	☐	☐
(2) Some years of primary education	☐	☐	☐
(3) Completed primary education	☐	☐	☐
(4) Completed lower secondary education	☐	☐	☐
(5) Completed upper secondary education	☐	☐	☐
(6) Completed sixth form education	☐	☐	☐
(7) College or other non-university tertiary education	☐	☐	☐
(8) University education	☐	☐	☐
(9) Do not know	☐	☐	☐

7. What was the medium of instruction in which your parents and guardian completed their education ?

	Father	Mother	Guardian
(1) Malay	☐	☐	☐
(2) Chinese	☐	☐	☐
(3) English	☐	☐	☐
(4) Tamil	☐	☐	☐
(5) Do not know	☐	☐	☐
(6) Other (specify) ______________	☐	☐	☐

8. Name the present occupation, organization or firm and place of work of your parents or guardian. (Refer to Annex A). If retired, state the last occupation held.

Father :

Occupational title : ______________________________

or not working ☐

For coding only.

Category of occupation (please fill in the alphabet for the category as shown in Annex A) : ______________________

Name of organization or firm : ______________________

Place of work (town and state) : ______________________

Mother :

Occupational title : ______________________

or not working ☐

Category of occupation (please fill in the alphabet for the category as shown in Annex A) : ______________________

Name of organization or firm : ______________________

Place of work (town and state) : ______________________

Guardian :

Occupational title : ______________________

or not working ☐

Category of occupation (please fill in the alphabet for the category as shown in Annex A) : ______________________

Name of organization or firm : ______________________

Place of work (town and state) : ______________________

9. In what sector are your parents or guardian employed? (If retired, state the sector in which they were last working).

	Father	Mother	Guardian
(1) Government sector	☐	☐	☐
(2) Quasi-government sector	☐	☐	☐
(3) Private sector	☐	☐	☐
(4) Works for himself/herself (self-employed)	☐	☐	☐
(5) Unemployed	☐	☐	☐
(6) Other (specify) ______________	☐	☐	☐

For coding only.

10. In which economic sector are your parents or guardian employed ? (If retired, state the sector in which they were last employed).

		Father	Mother	Guardian
(01)	Agriculture, forestry, hunting and fishing	☐	☐	☐
(02)	Mining and quarrying	☐	☐	☐
(03)	Manufacturing	☐	☐	☐
(04)	Construction	☐	☐	☐
(05)	Electricity, water, gas or sanitary services	☐	☐	☐
(06)	Commerce (wholesale and retail, banking, insurance and real estate)	☐	☐	☐
(07)	Transport, storage and communication	☐	☐	☐
(08)	Service (civil administration and defence, education, health, medicine, recreation and entertainment, other services)	☐	☐	☐
(09)	Unemployed	☐	☐	☐
(10)	Other (specify) ____________________	☐	☐	☐

11. Indicate the monthly income of your parents or guardian. If retired, state the last income per month before retirement.

(1) Father : about M$ ________ per month

(2) Mother : about M$ ________ per month

(3) Guardian : about M$ ________ per month

12. Where did you live before you went to primary school ?

Name the town/village/land development scheme :

____

State of : ________________________________

13. What grade did you get in your MCE/SPM/SPVM ?

(1) Grade I ☐

(2) Grade II ☐

(3) Grade III ☐

For coding only.

14. What is your present course of study ?

(1) Arts ☐

(2) Science ☐

(3) Technical ☐

(4) Other (specify)

________________________ ☐

15. Is the present course of study your first choice ?

(1) Yes ☐

(2) No ☐

16. Do you like the course you are now doing ?

(1) Very much ☐

(2) Reasonably ☐

(3) Not at all ☐

17. Did you get any guidance/advice on career possibilities before you applied for sixth form education ?

(1) Yes ☐

(2) No ☐

If 'no', skip Questions 18(i) and (ii) and continue with Question 19.
If 'yes', continue with Question 18(i) and (ii).

18(i). If 'yes', where did you get the guidance/advice ?

(1) Teachers of the school ☐

(2) Parents or relatives ☐

(3) Guidance and counselling or career masters ☐

(4) Friends or other students ☐

(5) General information from books, newspaper, etc. ☐

(6) Other (specify)

________________________ ☐

(ii) The guidance/advice given was :

(1) Very satisfactory ☐

(2) Satisfactory ☐

(3) Not satisfactory ☐

For coding only.

19. What is the major source of finance for your present education ?

(1) Scholarship/bursary provided by government or quasi-government agencies ☐

(2) Scholarship/bursary provided by other agencies ☐

(3) Family resources ☐

(4) Own effort (employment, savings, etc.) ☐

(5) Loan ☐

20. Are you staying in a hostel now ?

(1) Yes ☐

(2) No ☐

21. If you enter employment after obtaining HSC/STPM, how much do you think you would earn per month ?

About M$ ____________ per month

22. Why do you undertake sixth form education ? (Indicate the level of importance of each of the reasons given below).

	Very important (3)	Important (2)	Not important (1)
To get the necessary qualification for entry into a university	☐	☐	☐
Scholarship/bursary incentives	☐	☐	☐
Desire for more education for its own sake	☐	☐	☐
To enhance employment prospects	☐	☐	☐
To enhance prospects for college-level or other non-university tertiary education	☐	☐	☐
My parents/guardian asked me to do so	☐	☐	☐
Other (specify) ____________	☐	☐	☐

23. What do you intend to do after you have completed your sixth form education ?

(1) Pursue university education immediately ☐

(2) Work for a while before pursuing university education ☐

(3) Pursue college-level or non-university tertiary education ☐

(4) Seek employment ☐

For coding only.

24. To what extent does choice of career depend on success in university studies ?

(1) Very much ☐

(2) To some extent ☐

(3) Not at all ☐

25. The following list gives four methods of obtaining better knowledge on conditions of work, promotion prospects, etc. Please rank them in order of preference. Use the numbers 1, 2, 3 and 4 to indicate the rank order of these methods (1 = the most preferred and 4 = the least preferred).

Practical job experience during the course of study ☐

Personally getting information from prospective employers ☐

Reading careers publications ☐

Discussing with workers from related fields ☐

26. The following factors may discourage you from working in a rural area. Indicate the degree of importance of each of the factors.

	Very important (3)	Important (2)	Not important (1)
Lack of tap water, electricity, etc.	☐	☐	☐
Communication and transportation problems	☐	☐	☐
Separation from friends and relatives	☐	☐	☐
Belief that rural social life is dull and slow	☐	☐	☐
No scope for professional self-improvement	☐	☐	☐
Possible delays in promotion	☐	☐	☐
Family may face problems	☐	☐	☐
Other (specify)			
______________________	☐	☐	☐

27. The following factors may induce you to work in a rural area. Indicate the degree of importance of each of the factors.

	Very important (3)	Important (2)	Not important (1)
Financial incentives	☐	☐	☐
Promotion prospects	☐	☐	☐
A post of greater responsibility	☐	☐	☐
Low cost of living	☐	☐	☐

For coding only.

	Very important (3)	Important (2)	Not important (1)
Opportunity for a freer life	☐	☐	☐
Family considerations	☐	☐	☐
Other (specify)			
______________________	☐	☐	☐

28. How important do you consider each of the following factors in getting a job ?

	Very important (3)	Important (2)	Not important (1)
Academic record	☐	☐	☐
Aptitude test	☐	☐	☐
Interview	☐	☐	☐
Past experience in a similar kind of job	☐	☐	☐
Letters of recommendation	☐	☐	☐
Physical appearance	☐	☐	☐
Being married	☐	☐	☐
Sports activities	☐	☐	☐
Cultural activities	☐	☐	☐
Student leadership	☐	☐	☐
Sex of a person	☐	☐	☐
Family background	☐	☐	☐
Other (specify)			
______________________	☐	☐	☐

29. How important do you think are the following factors towards making a job satisfactory ?

	Very important (3)	Important (2)	Not important (1)
Interesting work	☐	☐	☐
Using special talents	☐	☐	☐
Creative work	☐	☐	☐
No supervision	☐	☐	☐
Opportunity for further studies	☐	☐	☐
Opportunity for improving competence	☐	☐	☐
Helpful to others and society	☐	☐	☐
Work with people	☐	☐	☐

For coding only.

	Very important (3)	Important (2)	Not important (1)
Good income	☐	☐	☐
Travel	☐	☐	☐
Supervise others	☐	☐	☐
Better prospects	☐	☐	☐
Secure future	☐	☐	☐
Time for family and hobbies	☐	☐	☐
Using skills learned in formal schooling	☐	☐	☐
Proximity to place of work of spouse	☐	☐	☐

If you intend to seek employment or pursue college level or non-university tertiary education, skip Questions 30(i)-(xi). If you intend to pursue university education, please answer Questions 30(i)-(xi).

30. If you intend to pursue university education after sixth form :

(i) Indicate your reasons for intending to do so. (Indicate the degree of importance of each of the reasons given below).

	Very important (3)	Important (2)	Not important (1)
Want a specific professional qualification	☐	☐	☐
Desire study for its own sake	☐	☐	☐
Better employment opportunities for university graduates	☐	☐	☐
The country needs my talents	☐	☐	☐
Other (specify) ______________________	☐	☐	☐

(ii) Which course do you intend to major in ?

(01) Mathematics/statistics	☐
(02) Physical sciences	☐
(03) Biological sciences	☐
(04) Chemistry	☐
(05) Language and literature	☐
(06) Psychology	☐
(07) Medicine	☐

(08) Engineering ☐
(09) Public administration ☐
(10) Education ☐
(11) Dentistry ☐
(12) Sociology ☐
(13) Anthropology ☐
(14) Philosophy ☐
(15) History ☐
(16) Economics/business administration/management ☐
(17) Geography ☐
(18) Agriculture ☐
(19) Law ☐
(20) Accountancy ☐
(21) Computer science ☐
(22) Religious studies ☐
(23) Architecture ☐
(24) Other social sciences (e.g. diplomacy, home economics) ☐
(25) Political science ☐
(26) Journalism ☐
(27) Other (specify)
________________________________ ☐

iii) Indicate the degree of importance of the following factors in your choice of the course of study indicated above.

	Very important (3)	Important (2)	Not important (1)
I am interested in the field	☐	☐	☐
Good job opportunities	☐	☐	☐
High salary for people qualified in the field	☐	☐	☐
My parents/guardian expect me to pursue this course of study	☐	☐	☐
My friends intend to choose this field of study	☐	☐	☐

For coding only.

	Very important (3)	Important (2)	Not important (1)
Good opportunity for me to work in the urban area	☐	☐	☐
Good opportunity for me to work in the rural area	☐	☐	☐
Good opportunity for me to work in the government sector	☐	☐	☐
Good opportunity for me to work in the private sector	☐	☐	☐
Other (specify) ____________________	☐	☐	☐

(iv) How would your education be financed ?

(1) Scholarship/bursary provided by government or quasi-government agencies ☐

(2) Scholarship/bursary provided by other agencies ☐

(3) Family resources ☐

(4) Own effort (employment, savings, etc.) ☐

(5) Loan ☐

(v) What sector would you like to work in after graduation ?

(1) Government sector ☐

(2) Quasi-government sector ☐

(3) Private sector ☐

(4) Work for myself (self-employed)/ family business ☐

(5) Other (specify) ____________________ ☐

(vi) What occupation do you expect to get after graduating from the university ? (Refer to Annex A).

____

(vii) What economic sector do you expect to work in after graduating from the university ?

(1) Agriculture, forestry, hunting and fishing ☐

(2) Mining and quarrying ☐

(3) Manufacturing ☐

For coding only.

(4) Construction ☐

(5) Electricity, water, gas or sanitary services ☐

(6) Commerce (wholesale and retail, banking, insurance and real estate) ☐

(7) Transport, storage and communication ☐

(8) Service (civil administration and defence, education, health medicine, recreation and entertainment, other services) ☐

(9) Other (specify) __________________ ☐

(viii) What starting monthly salary do you expect to get after graduation ?

About M$ __________ per month

(ix) Do you intend to seek employment in your major field of study after completing your university education ?

(1) Yes, permanently ☐

(2) Yes, but not permanently ☐

(3) No ☐

(x) Would some form of guidance and counselling regarding courses of study and job opportunities be useful before you enter university ?

(1) Yes ☐

(2) No ☐

(3) No opinion ☐

(xi) Where do you intend to pursue your university education ?

(1) In a local university ☐

(2) In a foreign university ☐

Name of country : ____________________

Annex A

(A) Occupational Category: Professional, Technical and Related Workers

Code	Name of Occupation
01	Physical scientists and related technicians
02	Architects, engineers and related technicians
03	Aircraft and ships officers
04	Life scientists and related technicians
05	Medical, dental, veterinary personnel and related technicians
06	Statisticians, mathematicians, systems analysts and related technicians
07	Economists
08	Accountants
09	Jurists
10	Teachers
11	Workers in religion
12	Authors, journalists and related writers
13	Sculptors, painters, photographers (professional) and related creative artists
14	Composers and performing artists
15	Athletes, sportsmen and related workers
16	Librarians, archivists and curators
17	Sociologists, anthropologists and related scientists
18	Social workers
19	Personnel and occupational specialists
20	Translators and interpreters
21	Other professional and technical workers

B) Occupational Category: Adminstrative and Managerial Workers

Code	Name of Occupation
22	Legislative administrators
23	Government administrators
24	General managers
25	Production managers
26	Other managers

(C) Occupational Category: Clerical and Related Workers

Code	Name of Occupation
27	Clerical supervisors
28	Government executive officials
29	Stenographers, typists, and card and tape punching machine operators
30	Bookkeepers, cashiers and related workers
31	Computing machine operators
32	Transport and communications supervisors
33	Transport conductors
34	Mail distribution clerks
35	Telephone and telegraph operators
36	Clerks not elsewhere classified

(D) Occupational Category: Sales Workers

Code	Name of Occupation
37	Managers (wholesale and retail)
38	Proprietors (wholesale and retail)
39	Technical salesmen, commercial travellers and manufacturers' agents
40	Insurance, real estate, securities and business services, salesmen and auctioneers
41	Salesmen, shop assistants and related workers
42	Salesworkers not elsewhere classified

(E) Occupational Category: Service Workers

Code	Name of Occupation
43	Managers (catering and lodging services)
44	Proprietors (catering and lodging services)
45	Housekeeping and related services
46	Cooks, waiters, bartenders, supervisors and related workers
47	Domestic service workers, caretakers, cleaners and launderers
48	Hairdressers, barbers, beauticians and related workers
49	Protective service workers or firefighters, policemen
50	Other service workers

(F) Occupational Category: Agricultural, Animal Husbandry, Forestry Workers, Fishermen and Hunters

Code	Name of Occupation
51	Farm managers and supervisors
52	Farmers
53	Agricultural and animal husbandry workers
54	Forestry workers
55	Fishermen, hunters and related workers

(G) Occupational Category: Production and Related Workers, Transport Equipment Operators and Labourers

Code	Name of Occupation
56	Production supervisors and general foremen
57	Miners, quarrymen
58	Machine tool operators
59	Tailors
60	Broadcasting station operators, cinema projectionists
61	Printers, photographers (those working in photo studios)
62	Plumbers, painters, bricklayers, carpenters
63	Transport equipment operators
64	Construction workers
65	Labourers not elsewhere classified

Appendix II

Undergraduate Questionnaire*

Please respond by placing a tick (✓) in the appropriate box or filling in the required information in the space provided.

For coding only.

Section I

1. Which faculty are you studying in now ?
   - (1) Faculty of Economics and Administration ☐
   - (2) Faculty of Engineering ☐
   - (3) Faculty of Science ☐
   - (4) Faculty of Medicine ☐
   - (5) Faculty of Dentistry ☐
   - (6) Faculty of Arts and Social Science ☐
   - (7) Faculty of Law ☐
   - (8) Computer Centre ☐
   - (9) Faculty of Education ☐

2. What is your main area of specialization now ? (Eg. economics, linguistics, civil engineering, electrical engineering, etc.).

   ____

3. Why did you choose this area of specialization ?

   ____

4. Do you wish to change your area of specialization ?
   - (1) Yes ☐
   - (2) No ☐

   If 'yes', which area of specialization would you change to ? Specify.

   ____

5. What is your reason for this change ?

   ____

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* Translated from Bahasa Malaysia.

For coding only.

6. Where did you live during the 1982/83 university session ?
   - (1) In a university residential college ☐
   - (2) In an off-campus hostel ☐
   - (3) In my own/family's house ☐
   - (4) In a rented house/room off-campus ☐
   - (5) In a friend's house ☐

7. If given a choice, where would you like to live when you are in the university ?
   - (1) In a university residential college ☐
   - (2) In an off-campus hostel ☐
   - (3) In a rented house off-campus ☐

8. Currently, what is your main source of finance for your studies ?
   - (1) Government scholarship/bursary ☐
   - (2) Teaching scholarship ☐
   - (3) Scholarship/bursary from the private sector ☐
   - (4) Government loan ☐
   - (5) Loan from the private sector ☐
   - (6) University loan ☐
   - (7) My own savings ☐
   - (8) Family sources ☐

9. Why do you further your studies at the university level ? (Choose the most important reason).
   - (1) To obtain a professional qualification ☐
   - (2) To obtain a good job in the future ☐
   - (3) To widen my knowledge ☐
   - (4) Parental pressure ☐
   - (5) I was given a scholarship/bursary ☐
   - (6) Other (specify) ______________________ ☐

10. How did you fare in your examination last year ?
   - (1) Very satisfactory ☐
   - (2) Satisfactory ☐
   - (3) Not too satisfactory ☐
   - (4) Not satisfactory at all ☐

For coding only.

11. How do you think you might fare in your final examination this year ?

(1) Pass with distinction ☐

(2) Pass with credit ☐

(3) Pass ☐

(4) Fail ☐

12. To what extent do you agree with the following statements ?

	Strongly agree (1)	Agree (2)	Do not agree (3)	Do not know (4)
The courses that you attend will be useful in your job in the future	☐	☐	☐	☐
University education makes life meaningful to you now	☐	☐	☐	☐
You sometimes regret having come to the university	☐	☐	☐	☐
University education prepares you for a fuller life in the future	☐	☐	☐	☐
University education is merely a stepping-stone to a good job	☐	☐	☐	☐
The university course that you pursue will be relevant to the occupation you will choose later	☐	☐	☐	☐
University education provides various opportunities for one to expand one's interest	☐	☐	☐	☐
University education is so intensive that one is unable to involve oneself in one's other interests	☐	☐	☐	☐
University education puts emphasis mainly on passing examinations	☐	☐	☐	☐

13. Do you have a close friend of another race ?

(1) Yes ☐

(2) No ☐

For coding only.

14. While you are busy with your studies in the university, how often are you able to read the daily newspaper ?

(1) Everyday ☐
(2) Two or three times a week ☐
(3) About once a week ☐
(4) Seldom ☐

15. During the whole of last year, how many novels were you able to read ? (Including novels in English, Malay, etc.).

(1) None at all ☐
(2) One novel ☐
(3) 2-3 novels ☐
(4) 4-5 novels ☐
(5) 6-10 novels ☐
(6) 11 or more ☐

16. How interested are you in the political and economic development of our country ?

(1) Very interested ☐
(2) Interested ☐
(3) A little interested ☐
(4) Not interested ☐

17. How interested are you in the political and economic development outside our country ?

(1) Very interested ☐
(2) Interested ☐
(3) A little interested ☐
(4) Not interested ☐

18. Presently, as you go about your studies, do you find it difficult having to use reference materials written in English ?

(1) Not difficult ☐
(2) A little difficult ☐
(3) Difficult ☐

19. Presently, as you go about your studies, do you find it difficult having to use reference materials written in Malay ?

(1) Not difficult ☐
(2) A little difficult ☐
(3) Difficult ☐

For coding only.

20. In your studies now, in which language are the reference materials you use written ?
    - (1) Mostly in Malay ☐
    - (2) In Malay as well as in English ☐
    - (3) Mostly in English ☐

21. In your opinion, did your schooling at the secondary level provide you with a strong enough foundation to follow the courses in the university now ?
    - (1) Yes ☐
    - (2) A little ☐
    - (3) No ☐

22. Have you ever looked for part-time job during the university long vacation ?
    - (1) Yes ☐
    - (2) No ☐

23. Have you ever taken part-time jobs during the university long vacation ?
    - (1) Yes ☐
    - (2) No ☐

24. If 'yes', in which of the following have you worked ?
    - (1) Private sector ☐
    - (2) Government sector ☐
    - (3) Statutory body ☐
    - (4) Own business ☐
    - (5) Family's or relative's business ☐

25. Based on your experience, looking for a job during the long vacation is :
    - (1) Easy ☐
    - (2) Difficult ☐
    - (3) Do not know ☐

26. How active are you in cultural activities (eg. music, drama, dancing, religion) in the university now ?
    - (1) Very active ☐
    - (2) Active ☐
    - (3) A little active ☐
    - (4) Not interested ☐

For coding only.

27. How interested are you in participating in games and sports in the university now ?

(1) Very interested ☐
(2) Interested ☐
(3) Only a little interested ☐

Section II

28. Do you think that you can get a job that is suited to your qualification when you graduate from the university ?

(1) Yes ☐
(2) No ☐
(3) Do not know ☐

29. In which of the following do you hope to work later ?

(1) Government sector ☐
(2) Statutory Body ☐
(3) Private sector ☐
(4) Own business ☐
(5) Family business ☐
(6) Do not know ☐

30. How much do you estimate your monthly income to be when you graduate from the university ?

M$ _________ per month

31. State the occupation of your choice after graduating from the university (eg. teacher, government officer, estate manager, bank officer, etc.).

____

32. What is your main reason for choosing the above occupation ? (Select the most important reason from the list below).

(1) Because you are bonded by a scholarship for the above job ☐
(2) Because the training/education which you are getting now is closely related to the above job ☐
(3) Because the above job is easy to get ☐
(4) Because the above job brings in a good salary ☐
(5) Because members of your family urge you to take the above job ☐
(6) Other reason (specify) : ____________________
____________________________________ ☐

For coding only.

33. Where would you like to work ?

(1) In a city ☐

(2) In a small town ☐

(3) In a rural area ☐

34. Indicate the degree of importance of each of the following factors in discouraging you from working in a rural area.

	Very important (1)	Important (2)	Not important (3)
There is no tap water and electricity	☐	☐	☐
Transportation difficulties	☐	☐	☐
Far from my friends	☐	☐	☐
Life in the rural areas is boring	☐	☐	☐
No opportunity for further studies	☐	☐	☐
Not likely to get a promotion	☐	☐	☐
Other reason (Specify) ________________	☐	☐	☐

35. How long do you think you will have to wait to get a job after graduation ?

(1) As soon as you graduate ☐

(2) 1-3 months after graduation ☐

(3) 4-6 months after graduation ☐

(4) 7-12 months after graduation ☐

(5) More than 12 months after graduation ☐

36. Are you worried about your ability in getting the right job after graduation ?

(1) Very worried ☐

(2) Quite worried ☐

(3) A little worried ☐

(4) Not worried ☐

37. In your opinion, how serious is the unemployment problem among graduates ?

(1) Very serious ☐

(2) Serious ☐

(3) Not serious ☐

(4) Do not know ☐

For coding only.

38. If getting a job with the government or the private sector is difficult, are you prepared to be self-employed ?

(1) Yes ☐

(2) No ☐

(3) Do not know ☐

39. What is your opinion about the following statements ?

	Strongly agree (1)	Agree (2)	Do not agree (3)	Do not know (4)
This country is facing a situation whereby people with university qualifications are finding it hard to get jobs that are commensurate with their qualifications	☐	☐	☐	☐
In the next 5-10 years university graduates will face difficulty in getting jobs that are commensurate with their qualifications	☐	☐	☐	☐
Graduates who are proficient in English (besides Malay) will find it easier to get jobs compared to those who are proficient in Malay only	☐	☐	☐	☐

40. Should a university have a bureau to help graduates find jobs ?

(1) Yes ☐

(2) No ☐

(3) Do not know ☐

41. Where did you obtain information about job opportunities in the occupation you have chosen ? (Put a tick in the appropriate box to indicate the degree of importance to you of each of the following sources).

	Very important (1)	Important (2)	Not important (3)
From parents and relatives	☐	☐	☐
From friends	☐	☐	☐
From newspapers	☐	☐	☐
From experience in the job	☐	☐	☐
From teachers of my former school	☐	☐	☐
From career officers in the university	☐	☐	☐
From lecturers in the university	☐	☐	☐

For coding only.

42. Who in particular had influenced you in choosing the above stated occupation ? (Indicate only one from the list below).

(1) Family and relatives ☐
(2) Friends ☐
(3) Teachers of my former school ☐
(4) University lecturers ☐
(5) Career officers in the university ☐
(6) Those who are already in this occupation ☐
(7) Do not know ☐

43. As far as you know, how is it that your friends who graduate from the university find it so easy to get the kind of jobs they like ? (For each of the reasons stated below, indicate its degree of importance).

	Very important (1)	Important (2)	Not important (3)
Because they have the training and qualifications appropriate for the jobs	☐	☐	☐
Because some of them have family ties with the employers	☐	☐	☐
Because they have the personality appropriate for the jobs	☐	☐	☐
Because they are of the same ethnic origin as the employers	☐	☐	☐
Because they have adequate information on how to get a job	☐	☐	☐

44. If you had to advise your younger siblings or relatives on the choice of field of study in the university, which field of study would you recommend to them so that it is easy for them to get a job on graduation ?

____

45. In order to get a job in the private sector, the level (class) of the applicant's university qualification is of no importance. To what extent do you agree with this statement ?

(1) Strongly agree ☐
(2) Agree ☐
(3) Do not agree ☐
(4) Do not know ☐

For coding only.

46. It is not important for you to get a job in the private sector for the field of study you have pursued in the university. To what extent do you agree with this statement ?
   (1) Strongly agree ☐
   (2) Agree ☐
   (3) Do not agree ☐
   (4) Do not know ☐

Section III

47. What grade did you get for your MCE/SPM/SPVM examination ?
   (1) Grade I ☐
   (2) Grade II ☐
   (3) Grade III ☐

48. If you have been in the sixth form or its equivalent, indicate the stream you were in.
   (1) Arts ☐
   (2) Science ☐
   (3) Technical ☐
   (4) Pre-university/matriculation ☐

49. Indicate your sixth form or its equivalent examination results.
   (1) Full certificate ☐
   (2) Statement ☐
   (3) A pass in the pre-university/ matriculation examination ☐

50. What was the language medium of the secondary school you attended ?
   (1) Malay ☐
   (2) English ☐
   (3) Chinese ☐
   (4) Arabic ☐
   (5) Other (specify) ____________________ ☐

51. What type of primary school did you attend ?
   (1) National primary school ☐
   (2) National type primary school (English) ☐
   (3) National type primary school (Chinese) ☐
   (4) National type primary school (Tamil) ☐

For coding only.

52. Before you entered the university you were a :
   (1) Student ☐
   (2) Teacher ☐
   (3) Clerk ☐
   (4) Government officer ☐
   (5) Other (specify)
   ____________________ ☐

53. Your sex:
   (1) Male ☐
   (2) Female ☐

54. How old are you now ?
   (1) Below 20 years old ☐
   (2) 20-25 years old ☐
   (3) 26-30 years old ☐
   (4) 31-35 years old ☐
   (5) Above 35 years old ☐

55. Are you married ?
   (1) Yes ☐
   (2) No ☐

56. What is the present monthly income of your parents or guardian ?
   (1) More than M$2,000 ☐
   (2) M$1,501 - M$2,000 ☐
   (3) M$1,101 - M$1,500 ☐
   (4) M$801 - M$1,110 ☐
   (5) M$501 - M$800 ☐
   (6) M$201 - M$500 ☐
   (7) Less than M$200 ☐

57. Where did you live when you were young ?
   (1) In a big town ☐
   (2) In a small town ☐
   (3) In a village ☐
   (4) In a land development scheme ☐

For coding only.

58. What is the occupation of your father/guardian ?

____

59. What is the highest level of education of your father ?

(1) Never been to school ☐
(2) Primary education ☐
(3) Religious education ☐
(4) Some years of lower secondary education ☐
(5) LCE/SRP ☐
(6) SC/MCE/SPM/SPVM ☐
(7) Sixth form/college ☐
(8) University ☐

60. What is the highest level of education of your mother ?

(1) Never been to school ☐
(2) Primary education ☐
(3) Religious education ☐
(4) Some years of lower secondary education ☐
(5) LCE/SRP ☐
(6) SC/MCE/SPM/SPVM ☐
(7) Sixth form/college ☐
(8) University ☐

61. Tick where appropriate to indicate your ancestry.

(01) Malay ☐
(02) Chinese ☐
(03) Indian ☐
(04) Sri Lankan ☐
(05) Eurasian ☐
(06) Kadazan ☐
(07) Iban ☐
(08) Dayak ☐
(09) Melanau ☐
(10) Sino-Kadazan ☐
(11) Murut ☐
(12) Other (specify) ______________________ ☐

Appendix III

Graduate Questionnaire*

Please respond by placing a tick (✓) in the appropriate box or filling in the required information in the space provided.

For coding only.

Occupation : ______________________________

Address (office) : ______________________________

____

Year graduated (first degree) : ______________________________

Degree(s) : ______________________________

Universities attended : ______________________________

____

Section I

1. (i) Your age : _____ years

(ii) Indicate the state in which you were born : ______________

2. Your ethnic origin :

(1) Malay and other Bumiputera ☐

(2) Chinese ☐

(3) Indian/Pakistani/Sri Lankan ☐

(4) Other (specify) ____________ ☐

3. Write down the town and state where you completed your secondary education.

____

4. Marital status and sex :

(1) Married ☐

(2) Single ☐

(3) Divorced ☐

(4) Male ☐

(5) Female ☐

5. (i) What is the present or last occupation of yourself, father/guardian, mother and spouse ?

(1) Yourself : ______________________________

(2) Father/guardian : ______________________________

(3) Mother : ______________________________

(4) Spouse : ______________________________

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* Translated from Bahasa Malaysia

For coding only.

(ii) For each person, tick the respective economic sector in which employed.

		Self	Father/ guardian	Mother	Spouse
(1)	Agriculture, forestry, hunting and fishing	☐	☐	☐	☐
(2)	Mining and quarrying	☐	☐	☐	☐
(3)	Manufacturing	☐	☐	☐	☐
(4)	Construction	☐	☐	☐	☐
(5)	Electricity, water, gas and sanitary services	☐	☐	☐	☐
(6)	Commerce	☐	☐	☐	☐
(7)	Transport, storage and communication	☐	☐	☐	☐
(8)	Services	☐	☐	☐	☐
(9)	Other (specify) ______________________	☐	☐	☐	☐

(iii) For each person, indicate the respective sector of employment.

		Self	Father/ guardian	Mother	Spouse
(1)	Government	☐	☐	☐	☐
(2)	Private	☐	☐	☐	☐
(3)	Quasi-Government	☐	☐	☐	☐
(4)	Self-employed	☐	☐	☐	☐

(iv) What was your father's/guardian's occupation when you were a university student ?

____

6. For your father/guardian, mother and spouse, tick the highest educational level attained.

		Father/ guardian	Mother	Spouse
(1)	No formal education	☐	☐	☐
(2)	Primary education	☐	☐	☐
(3)	Lower secondary education	☐	☐	☐
(4)	Upper secondary education	☐	☐	☐
(5)	Tertiary (non-university)	☐	☐	☐
(6)	University education	☐	☐	☐

For coding only.

Section II

7. (i) State your intended field of specialization in the university :

____

(ii) State the actual field you specialized in :

____

8. Why did you undertake higher education ? (Indicate the importance of each of the reasons).

	Very important (3)	Important (2)	Not important (1)
Wanted a specific professional occupation	☐	☐	☐
Desired study for its own sake	☐	☐	☐
Better employment opportunities for graduates	☐	☐	☐
The country needed my talent for manpower	☐	☐	☐
Other (specify) ______________	☐	☐	☐

9. Did you ever change your field of study during the course of your higher education ?

(1) Yes ☐

(2) No ☐

10. If 'yes', the field of study was changed from :

_________________________ to ____________________________

11. Please indicate your most important reason for the change.

(1) Field of study was unsuitable ☐

(2) Field of study was too difficult ☐

(3) Poor grades or failure ☐

(4) Career opportunities in the field I finally specialized in were better ☐

(5) Financial reasons ☐

(6) Family pressure to change ☐

(7) Other (please specify) __________________________ ☐

____

12. What was the main source of finance for your university education?

(1) Government bursary/scholarship ☐

(2) Bursary/scholarship from other agencies ☐

For coding only.

(3) Family ☐

(4) Own effort (employment, savings, etc.) ☐

(5) Loan ☐

(6) Other (specify) ______________________________ ☐

Section III

13. How did you get your first employment after graduation ? (Tick the most appropriate answer).

(1) Through the institution from which you graduated ☐

(2) Through the Ministry of Labour ☐

(3) Through newspaper advertisement ☐

(4) Through personal contacts with employer ☐

(5) Bonded by scholarship/bursary/grant ☐

(6) Other (specify) ______________________________ ☐

14. State the approximate waiting period before you secured your first job after completing your final examination in the university.

____________ months

15. Please tick the status of your first job (after leaving the university) and your present job.

	Temporary	Permanent	Part-time
First job	☐	☐	☐
Present job	☐	☐	☐

16. Did you ever change your occupation ?

(1) Yes ☐

(2) No ☐

17. If 'yes', please state

(1) Initial occupation __________ Subsequent occupation __________

__________________________ __________________________

(2) Initial sector ____________ Subsequent sector ____________

(3) Initial economic sector ____________ Subsequent economic sector ____________

18. If 'yes', why did you make the change ?

(1) Higher pay ☐

(2) Better conditions of service ☐

(3) Better use of training ☐

(4) Better prospects for promotion ☐

For coding only.

(5) More suited to personal talents ☐

(6) Lost previous job ☐

(7) Did not get along with the people you were working with ☐

(8) Better location ☐

(9) Other reason (specify) ____________________ ☐

19. Was there a placement service at the university you attended ?

(1) Yes ☐

(2) No ☐

20. Have you ever been trained as a teacher ?

(1) Yes ☐

(2) No ☐

21. Have you ever worked as a teacher ?

(1) Yes ☐

(2) No ☐

Section IV

22. The following list gives four ways of obtaining knowledge on conditions of work, promotion prospects, etc. Please rate them in order of preference to you. Use the numbers 1, 2, 3 and 4 to indicate the rank order of these methods (1 = the most preferred and 4 = the least preferred).

Practical job experience during the course of study ☐

Personally getting information from prospective employers ☐

Reading career publications ☐

Discussions with workers from particular fields ☐

	Very useful (3)	Useful (2)	Not useful (1)
23. To what extent is the course of study you pursued at the university useful to your present job ?	☐	☐	☐
To what extent is your degree useful in getting your present job ?	☐	☐	☐

For coding only.

24. Indicate the degree of importance of the following factors in discouraging you from working in a rural area.

	Very important (3)	Important (2)	Not important (1)
Lack of tap water, electricity, modern sanitation etc.	☐	☐	☐
Communication and transportation problems	☐	☐	☐
Separation from friends and relatives	☐	☐	☐
Perception that rural life is dull and slow	☐	☐	☐
No scope for self or professional development	☐	☐	☐
Possible delays in promotion	☐	☐	☐
Family inconveniences e.g. quality of children's schooling, spouse's employment	☐	☐	☐
Lack of recreational and entertainment facilities	☐	☐	☐
Other (specify) ______________	☐	☐	☐

25. Indicate the degree of importance of the following factors inducing you to work in a rural area.

	Very important (3)	Important (2)	Not important (1)
Financial incentives	☐	☐	☐
Better promotion prospects	☐	☐	☐
A post with greater responsibility	☐	☐	☐
Low cost of living	☐	☐	☐
Family ties	☐	☐	☐
Opportunity for a leisurely life	☐	☐	☐
Other (specify) ______________	☐	☐	☐

26. How important are the following factors in your getting your present job ?

	Very important (3)	Important (2)	Not important (1)
Academic record	☐	☐	☐
Aptitude test	☐	☐	☐
Interview	☐	☐	☐
Past experience in a similar kind of job	☐	☐	☐
Physical appearance	☐	☐	☐

For coding only.

	Very important (3)	Important (2)	Not important (1)
Being married	☐	☐	☐
Being single	☐	☐	☐
Extra-curricular sports activities	☐	☐	☐
Student leadership	☐	☐	☐
Extra-curricular cultural activities	☐	☐	☐
Being male	☐	☐	☐
Being female	☐	☐	☐
Other (specify) ______________	☐	☐	☐

27. To what extent was your choice of career dependent on success in your studies ?

(1) Not at all ☐

(2) Somewhat ☐

(3) very much ☐

28. How important are the following factors to you in (a) making a job satisfactory and (b) career advancement ?

	Making a job satisfactory			Career advancement		
	Very impt. (3)	Impt. (2)	Not impt. (1)	Very impt. (3)	Impt. (2)	Not impt. (1)
Interesting work	☐	☐	☐	☐	☐	☐
Using special talents	☐	☐	☐	☐	☐	☐
Creative work	☐	☐	☐	☐	☐	☐
No supervision	☐	☐	☐	☐	☐	☐
Opportunity for further studies	☐	☐	☐	☐	☐	☐
Opportunity for improving competence	☐	☐	☐	☐	☐	☐
Helpful to others and society	☐	☐	☐	☐	☐	☐
Work with people	☐	☐	☐	☐	☐	☐
Good income	☐	☐	☐	☐	☐	☐
Travel	☐	☐	☐	☐	☐	☐
Supervise others	☐	☐	☐	☐	☐	☐

For coding only.

29. What is the present or last monthly income of yourself, father/guardian, mother and spouse ?

Yourself : MS ______________ per month
Father/guardian : MS ______________ per month
Mother : MS ______________ per month
Spouse : MS ______________ per month

30. If you, your father/guardian, mother and spouse are managing your/their own business, please specify the nature of your/their business.

Yourself : ______________
Father/guardian : ______________
Mother : ______________
Spouse : ______________

31. What was your father's/guardian's monthly income when you were a university student ?

MS ______________ per month

Appendix IV

Employer Questionnaire

Please respond by placing a tick (✓) in the appropriate box or filling in the required information in the space provided.

For coding only.

Section I : Respondent's Characteristics

1. Name of respondent : ______________________________

2. Sex of respondent :
   - (1) Male ☐
   - (2) Female ☐

3. Position of respondent in the establishment :
   - (1) General Manager ☐
   - (2) Personnel Manager ☐
   - Other (specify) ______________________________

Section II : Organizational Characteristics

4. Location of establishment :
   - Town (specify) : ______________________
   - State (specify) : ______________________

5. Year in which organization was established :

   ____

6. Status of establishment :
   - (1) Government - Federal ☐
   - (2) Government - State ☐
   - (3) Government - Other ☐
   - (4) Statutory Body/ Public Enterprise ☐

If (1) - (4), please go to Section III

---

(5) Private Enterprise ☐

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only.

7. Percentage of foreign ownership of the enterprise :

(1) 0 - 25 ☐
(2) 26 - 50 ☐
(3) 51 - 75 ☐
(4) 76 - 100 ☐

8. Please specify percentage of local ownership by ethnic group :

(1) Bumiputera : ________
(2) Non-Bumiputera : ________

9. Main activity of the enterprise (please specify) :

____

____

10. Please give estimates of your enterprise as at 31st December, 1981 with respect to the following (please specify to nearest M$10,000):

Wage bill per annum : M$ ____________
Fixed assets : M$ ____________
Gross turnover per annum : M$ ________
Net profits per annum : M$ ________
Value added per annum : M$ ________

Section III : Manpower Characteristics as at 31st December 1981

11. Number of employees in your establishment who are

Full-time : ______________________
Part-time : ______________________

12. Number of employee in your establishment who have obtained :

Higher degrees (post-graduate diploma, master's, PhD) : ____________
First degree : ____________
Professional qualification : ____________
Undergraduate diploma qualification : ____________

13. In the following table, please fill in the number of university graduates in your establishment by ethnic group, sex and occupational level

Occupational level/type	Malaysian						Non-Malaysian		Total		Vacancies		For coding only
	Malay[a]		Chinese		Indian[b]								
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Senior executive													
Middle executive													
Junior executive													
Supervisory workers													
Technical and skilled workers													
Clerical workers													
Sales workers													
Service workers													
Other													

Notes : [a] Includes other indigeneous ethnic groups. [b] Includes Sri Lankans and Pakistanis.

14. In the following table, please fill in the number of university graduates in your establishment by ethnic group, sex and field of study.

Field of study	Malaysian						Non-Malaysian		For coding only
	Malay[a]		Chinese		Indian[b]				
	Male	Female	Male	Female	Male	Female	Male	Female	
Economics									
Commerce									
Other social sciences									
Humanities									
Education									
Architecture									
Fine arts									
Law									
Natural sciences									
Engineering									
Medical sciences									
Agricultural sciences									

Notes : [a] Includes other indigeneous ethnic groups. [b] Includes Sri Lankans and Pakistanis.

For coding only.

Section IV : Recruitment Criteria and Practices

15. In selecting university graduates for employment certain criteria are used. Please indicate the relative importance of the following:

	Very impt. (5)	Impt. (4)	Uncertain (3)	Unimpt. (2)	Very unimpt. (1)
Academic record	☐	☐	☐	☐	☐
Proficiency in Malay	☐	☐	☐	☐	☐
Proficiency in English	☐	☐	☐	☐	☐
Past experience relevant to job	☐	☐	☐	☐	☐
Performance at interview	☐	☐	☐	☐	☐
Strength of recommendation letters	☐	☐	☐	☐	☐
Achievement in aptitude tests	☐	☐	☐	☐	☐
Personality	☐	☐	☐	☐	☐
Male	☐	☐	☐	☐	☐
Marital status (i.e. married)	☐	☐	☐	☐	☐
Family background	☐	☐	☐	☐	☐
Ethnic origin	☐	☐	☐	☐	☐
Other (specify) ________________	☐	☐	☐	☐	☐

16. What methods does your establishment use to recruit graduates ?

Newspaper advertisement ☐

Scholarship bonds ☐

Through contacts with university staff ☐

Other personal contacts ☐

Labour department ☐

Other (specify)

____ ☐

17. With reference to language proficiency, would you agree that a good command of written and spoken Malay and/or English is required by your establishment ?

	Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
Malay	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐

If you ticked 'neutral', 'disagree' or 'strongly disagree' please go to Question 19.

For coding
only.

18. How does your establishment overcome employee language inadequacies, if any ?

(1) Place employee with language inadequacies in certain jobs requiring less language skills ☐

(2) Provide in-service training ☐

(3) Ignore the problem ☐

(4) Other (specify) : ____________________

____________________ ☐

19. In your establishment there is a preference for employing :

	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
Men rather than women graduates	☐	☐	☐	☐	☐
Single women rather than married women graduates	☐	☐	☐	☐	☐

20. Women graduates are not considered suitable for employment at the following levels :

	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
Administrative	☐	☐	☐	☐	☐
Managerial	☐	☐	☐	☐	☐
Professional	☐	☐	☐	☐	☐
Supervisory	☐	☐	☐	☐	☐
Other (please specify) ____________	☐	☐	☐	☐	☐

Section V : Employer's Perception of the Role of Universities

21. How does your establishment perceive the role of universities ?

	Very impt. (5)	Impt. (4)	Neutral (3)	Unimpt. (2)	Very unimpt. (1)
Imparting specific skills	☐	☐	☐	☐	☐
Imparting a broad general education	☐	☐	☐	☐	☐
Developing the ability to think systematically and rationally	☐	☐	☐	☐	☐
Creating sensitivity to and awareness of changes in community problems and needs	☐	☐	☐	☐	☐

For coding only.

22. How does your establishment perceive the value of the following extra-curricula activities ?

	Very impt. (5)	Impt. (4)	Neutral (3)	Unimpt. (2)	Very unimpt. (1)
Games and sports	☐	☐	☐	☐	☐
Cultural activities	☐	☐	☐	☐	☐
Hobbies	☐	☐	☐	☐	☐
Activities in student unions and societies	☐	☐	☐	☐	☐

23. Would your establishment be interested in co-operating with universities in fulfilling your establishment's manpower needs by providing the following ?

	Yes (1)	No (0)
Financial support to students e.g. scholarships, loans, grants	☐	☐
Prizes for outstanding academic performance	☐	☐
Endowment of professorial chairs	☐	☐
Vacation employment for under-graduates	☐	☐
Assistance in internship schemes	☐	☐
Other (specify) ____________________	☐	☐

Section VI : Employer's Evaluation of Graduates

24. In your establishment a relevant academic or professional qualification is important to job performance.

(1) Strongly agree ☐
(2) Agree ☐
(3) Uncertain ☐
(4) Disagree ☐
(5) Strongly disagree ☐

For coding only.

25. How do you rate the following university graduates in your establishment's workforce, generally?
Please rate as follows :

1 = Very poor, 2 = poor, 3 = average, 4 = good and 5 = very good.

Criteria	Economics	Commerce	Other social sciences	Humanities	Education	Architecture	Fine arts	Natural sciences	Engineering	Medical sciences	Agricultural sciences
Technical expertise											
Ability to think rationally and systematically											
Ability to write clearly											
Ability to speak clearly											
Ability to work independently											
Ability to socialize											
Ability to realize organizational goals											
Leadership qualities											
Organizational abilities											
Responsiveness to monetary incentives											
Company loyalty											
Trainability											
Capacity for preciseness and carefulness											

For coding
only.

26. How do you rate the job performance of the following categories of university graduates on the following scale :

1 = very poor, 2 = poor, 3 = average, 4 = good and 5 = very good.

Criteria	Time		Ethnic group			Sex		Training	
	Graduates of the 1960s	Graduates of the 1970s	Bumiputera graduates	Chinese graduates	Indian and other graduates	Male graduates	Female graduates	Locally-trained graduates	Foreign-trained graduates
Technical expertise									
Ability to think rationally and systematically									
Ability to write clearly									
Ability to speak clearly									
Ability to work independently									
Ability to socialize									
Ability to realize organizational goals									
Leadership qualities									
Organizational abilities									
Responsiveness to monetary incentives									
Company loyalty									
Trainability									
Capacity for preciseness and carefulness									

For coding only.

Section VII : In-service Training

27. In-service training in equipping graduates with no working experience for their jobs is considered to be :

(1) Very unessential ☐

(2) Unessential ☐

(3) Neutral ☐

(4) Essential ☐

(5) Very essential ☐

28. Does your establishment provide :

	Yes (1)	No (0)
Formal on-the-job training ?	☐	☐
Informal on-the-job training ?	☐	☐
Overseas training ?	☐	☐
Training in specialized training institution ?	☐	☐
Other (specify) ______________________	☐	☐

29. Does your establishment consider post-graduate training :

(1) Very unimportant ? ☐

(2) Unimportant ? ☐

(3) Neutral ? ☐

(4) Important ? ☐

(5) Very important ? ☐

30. Is your establishment willing to send its staff for post-graduate training ?

	Full-time	Part-time	No
With pay	☐	☐	☐
Without pay	☐	☐	☐

31. Would your establishment reward (with better promotion prospects, higher salaries, etc.) those with higher degrees obtained under its training scheme ?

(0) No ☐

(1) Yes ☐

If 'No', why not ?

____

For coding only.

Section VIII : Wages

32. Please state the average starting gross monthly salary for the following categories of university graduates with first degree and HSC/STPM holders with no working experience.

Field of study	Malaysian trained	Overseas trained	
		Developed countries (e.g. U.S.A., Canada, Europe, Australia)	Developing countries (e.g. India, Pakistan, Taiwan)
Economics			
Commerce			
Other social sciences			
Humanities			
Education			
Architecture			
Fine arts			
Law			
Natural sciences			
Engineering			
Medical sciences			
Agricutural sciences			
HSC/STPM			

33. Is your organization's salary scale for university graduates influenced by the salary scale for university graduates in the public sector ?

(1) Strongly uninfluenced ☐
(2) Uninfluenced ☐
(3) Neutral ☐
(4) Influenced ☐
(5) Strongly influenced ☐

For coding
only.

Section IX : Forecast of Graduate Manpower Needs

34. Please give the number of graduate employees your establishment had at the end of 1975 and 1980 in different fields of specialization and the expected numbers your establishment would need of the same in 1985 and 1990. Please apply your own judgement in respect of the growth of your establishment in the next 8 years.

Year / Field	1975	1980	1985	1990
Economics				
Commerce				
Other social sciences				
Humanities				
Education				
Architecture				
Fine arts				
Law				
Natural sciences				
Engineering				
Medical sciences				
Agricutural sciences				

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IIEP Research Report No.66

How has the economic development of Malaysia affected the employment situation and the qualification structure of workers? How does the education system respond to the changes occurring in the qualification structure? What are the determinants of the demand for higher education in Malaysia? How does the system meet this demand? How do the students find jobs? To what extent does education help graduates in obtaining their jobs? What is the role of socio-economic status in this regard? What role does education play in career performance and what is the role of the functioning of the labour market? To what extent does the education system meet the expectations of the enterprises employing the graduates?

These are some of the questions that are analyzed in this book, which is based on a macro-analysis of the socio-economic and education system of the country and a micro-analysis of the perceptions and experiences of nearly 2,000 sixth-form students, 2,500 university students, 1,600 graduate employees and over 200 enterprises.

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